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## ORIGINAL COMMUNICATIONS.

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### LARYNGOSTOMY.

BY DR. J. BARATOUX, PARIS, FRANCE.

Among all the chronic affections of the larynx, there is one which, from the length of time required for treatment and its tendency to recur, and because of the general trouble it occasions, may be termed the *bête noir* of the laryngologist, I refer to cicatricial stenosis of the larynx and the contraction of that organ in a patient wearing a tube or canula following intubation or tracheotomy. Several successful attempts with a new surgical procedure encourage me to think that it may be possible to obtain satisfactory results where heretofore the cure has been approximate or the result a failure. There are still many cases in which the canula cannot be dispensed with as an aid to respiration.

The purpose of the operation to which I allude, laryngostomy, is to expose the larynx and very frequently the upper portion of the trachea (laryngo-tracheostomy) for a prolonged period. The first operation of this kind was performed the 26th of January, 1898, by Dr. Ruggi,<sup>1</sup> of Modene upon a child of five years who had undergone a tracheotomy for the removal of two laryngeal polypi. These recurred after two months, when they were removed by a low tracheotomy. Two years later, in spite of wearing a canula, the patient experienced difficulty in breathing and desired the removal of the canula. Dr. Ruggi then performed the operation for laryngo-fissure by separating the thyroid cartilage and opening the larynx, which permitted the removal of numerous little papilloma; he then curetted that part which he intended to dilate by a special method of tamponage. He then introduced into the laryngeal opening a little pocket of rubber tissue, filled with bits of sterilized

gauze. This pocket served as a dilator and at the same time the rubber tissue did not adhere to the mucous membrane. This treatment was renewed each day during two months until the cartilage had finally yielded to the action of the tampons and it was possible to remove the tracheal canula and close the tracheal and laryngeal openings. Twenty days later the patient was able to leave the clinic and though aphonic, the voice gradually became clearer. Dr. Ruggi also performed this operation at Boulogne upon a patient wearing a tube who had been treated unsuccessfully by several methods of dilatation.

Another attempt, not as successful, however, was made by Dr. Jaboulay,<sup>2</sup> of Lyons, who, in 1899, twice opened the larynx in a syphilitic, who had previously in 1897 had a tracheotomy performed by Dr. Garel. In 1900 Dr. Jaboulay noticed a recurrence which necessitated total laryngectomy.

In June, 1901, before the Belgian Society of Otologists, Dr. Beco<sup>3</sup> of Liege, reported the case of a child of four and one-half years that for two and one-half years had suffered with hoarseness, following measles. Later a cough and difficulty in breathing developed. The adenoids were removed and an examination of the larynx revealed a papilloma. Following the attack of measles and whooping cough with persistent expectoration, the increased suffocation necessitated a low tracheotomy in 1899. Eight months later, the obstruction of the larynx became greater than after the tracheotomy. In July, 1900, a thyrotomy was performed. The larynx was filled with a papillomatous mass, pressed in between the vocal cords superiorly and the ventricle. These were removed by means of the cutting nippers, the bistoury, the scissors, the galvano-cautery, and later the thyroid cartilage was closed by sutures. After fifteen days, the tube was removed. A recurrence took place after four months and was followed in November, 1900, by a tracheotomy, which revealed two enormous polypoid masses and laryngo-fissure was performed. An incision of the cricoid cartilage and in the superior rings of the trachea was made. These parts were thoroughly cleaned, tamponed with iodoform gauze and a canula inserted. After five days, under an anaesthetic, the tampons were removed and the incision in the trachea was extended to the canula, but as other polypoid masses were found, the tracheal incision was extended to the notch of the sternum at the base of the laryngeal fissure, the canula was re-introduced, the thyroid and cricoid cartilages closed with silk sutures, and dressing made without suturing

the skin. At the end of a week the cartilages had re-united and the canula was removed.

Dr. Beco concludes that if the operator is not certain that he has removed the entire neoplasm, or if the curettement undertaken exteriorly is followed by a recurrence, it is expedient in subsequent operations not to immediately close the laryngo-tracheal opening with suture, but to tampon it for a time and to suture it when there is no indication of a recurrence. The sutures need not be placed along the entire length of the tracheal incision.

Dr. Capele, of Boulogne, in 1904, operated upon a patient wearing a canula, who was not cured after various efforts at dilatation. Ruggi shortly afterward performed a similar operation upon an adult who for several years had worn a canula and which it was found advisable to retain.

The idea of a temporary opening in the larynx was advanced also several years later by Dr. Grossman,<sup>4</sup> of Vienna, who speaks as follows of his treatment of cancer of the larynx by means of X-rays:—A tracheotomy is followed by a laryngo-fissure. The neoplasm thus exposed is radically extirpated and the galvano-cautery applied to the involved area. The laryngo-fissure is maintained and daily applications of the X-ray made directly to the diseased tissues. The applications are facilitated by spreading the two wings of the thyroid cartilage as much as possible with forceps. This method permits not only a more rapid and more intense action of the X-rays, but allows one to readily follow the healing process and to detect more easily any signs of recurrence.

Killian<sup>5</sup> of Freiburg, in Breisgau, was the first to apply laryngostomy successfully in three severe cases of stricture of the larynx, one of which occurred in an adult following typhoid fever. This author has made no report on this subject, presenting only the canulae in T form of red rubber, which he used in the final treatment. Dr. Reimer of Dusseldorf, also tried these canulae.

One month earlier, Dr. Rabot of Lyons, in conjunction with Drs. Sargnon and Barlatier had shown the case of a child that had been operated on in April, 1906, in which Dr. Sargnon had followed in large measure the Killian method. Another case was shown by him that had been operated by Dr. Rochet in November, 1905.

Shortly afterward Drs. Claude Martin and Sargnon insisted upon the value of elastic dilation by means of rubber tubes in chronic cases of stenosis of the larynx and trachea, after having

tested the method in the cases of three children, two of whom we shall mention.

At the end of the same year Dr. Barlatier presented to the Medical Society of Lyons the child with sub-glottic stenosis that Dr. Rabot had treated and presented six months previously. Dr. Sargnon reported that an autoplasmic had been performed to close the laryngeal fistula after having inserted a Killian T drain of 8 mm. in diameter. At the same time he recommended laryngostomy in recurring papilloma and in certain forms of tuberculosis, notably in the budding and lupus form where the laryngeal lesion is not extensive.

This method permits an energetic local treatment. Recently Drs. Barlatier and Sargnon have again taken up this question and claim that they know thus far but three cases of Killian, two of Pieniazek and six cases in Lyons, of which five were operated by Drs. Rabot, Rochet and Vignard, and a sixth by Dr. Collet during 1906.

In May, 1907, Drs. Sargnon and Barlatier presented to the Société Française de Laryngologie the work upon Laryngostomy, in treatment of stenosis of the larynx. The five operations which they report were performed in November, 1905, by Drs. Rochet, Garel and Rabot; (2) in April, 1906, by Drs. Rabot and Sargnon; (3) in January, 1907; (4) in March, 1907, by Drs. Vignard and Sargnon; (5) in April, 1907, by Drs. Garel, Sargnon and Bonnamour.

Since then Dr. Sargnon operated upon a young girl already wearing a tube whom Dr. Marfan had treated unsuccessfully with internal dilatation at the Children's Hospital of Paris. This patient again wears a drainage tube, with which she could dispense, were it not for the fear of asphyxiation, which seizes her as soon as the canula is removed. Very shortly she will be ready for a plastic of the larynx.

Dr. Sargnon reports with Dr. Hau of Villefranche, the case of a child of six years upon whom laryngostomy was performed for total stenosis involving 4 cm. extending from the trachea through the thyroid and cricoid to the vocal cords.

Dr. Collet performed this operation for a cicatrix of the cricoid.

Another such operation was done at St. Etienne by Drs. Viannay, Descos and Deygas.

At the last meeting of the Italian Laryngological Congress in October, 1907, Dr. Canepile<sup>12</sup> cited the first operation of Ruggi, which was published by Nasi<sup>1</sup> and mentioned two others by the same author as well as one of his own. During the discussion Drs. Melzi



and Cagnola of Milan, reported two recent successful results obtained by them in two cases of laryngo-tracheal stenosis.

#### OPERATION.

The procedure employed by Killian is the one most generally accepted. The operation is divided into four steps. 1st. Laryngo-fissure. 2d. Dilatation and dressing. 3d. Auto-plastic. 4th. The maintenance of a provisional opening in the trachea. Drs. Sargnon and Barlatier, who had charge of most of the cases at Lyons, have perfected the second step by a method quite original with them and it is really the second step which is of most importance in this operation.

*Laryngo-fissure*—The laryngotomy may be total or partial, depending upon the necessity of a high tracheotomy or an inter-crico thyrotomy. At all events a laryngo-tracheotomy is performed. If the tracheotomy is very low a tracheal bridge is left intact above the canula. It is of the utmost importance not to undertake the operation when there are febrile or pulmonary disturbances, for fatal complications may ensue.

As anesthetic, ethyl bromide, chloroform, or, better still, local anesthesia, with the following Schleich solution is suggested:

R.

Cocain Hydrochlorat .....	Grms. 20.
Morphin Hydrochlorat .....	.025
Sodii Chlorid .....	.20
Acid Carbolic (5 per cent Aqueous Sol.).	Gtts. 2.
Aq. Destil .....	100.

Two or three cc. are injected one-quarter of an hour before the operation. The patient in the Rose position is placed with head hanging low over the bed. An incision is then made, long enough to perform either a laryngostomy or tracheotomy; then the cellular tissue is divided, also the aponeuroses of the muscles and of the thyroid body in case of a very low tracheotomy; then the anterior surface of the trachea above the canula is exposed. After carefully controlling the bleeding the canula is removed, and with a probe-tipped bistoury the trachea, the cricoid and thyroid are incised along the median line, taking care not to pass beyond the superior border of the thyroid. If a bridge is left above the canula, a puncture is made below the thyroid or the intercrico-thyroid, and a fenestra is made with scissors or bistoury. This division of cartilage, especially of the

cricoid, often presents great difficulties considering the tendency of this cartilage to ossify and to fill the larynx with cicatricial tissue. It is also necessary to resort alternatively to the scissors, the probe and the tracheal sound in order to make an artificial passage through this deformed area. The hemorrhage is controlled with hydrogen-peroxide; sometimes the tracheal canula must be replaced. However, if the anterior surface of the larynx and trachea have been carefully denuded there is little bleeding and an application to the mucosa of the larynx of a piece of gauze slightly moistened with the following solution suffices:

R.

Cocain Hydrochlorat .....	Grms. 1
Aqua Steril .....	20.
Sol. Adrenalin (1-1000) .....	20.

Using the electric head lamp for illumination, an opening is made along the median line of the entire cicatricial tissues as far as the posterior wall of the larynx, taking care not to injure the esophagus; it is not necessary to remove the cicatricial tissue as this does not suppurate when in contact with the rubber drain. This tissue may, however, be destroyed by gangrenous infection, probably of buccal origin, as was recently demonstrated by Drs. Vignard, Sargnon and Barlatier. For this reason it is necessary to make but one opening along the median line in which to place the rubber drain.

Sutures of mucosa, cartilage and skin are then made and when necessary because of stenosis, additional sutures are taken through the lateral cicatrices.

As suggested by Drs. Beco and Vignard, it is preferable to use a strong silk ligature rather than silver wire and to make deep sutures through cartilage, muscles and skin, at a sufficient distance from the cut edges. Three or four sutures are necessary.

The cleansing of the parts is completed, and the patient instructed to cough up the mucus and blood. The canula is then replaced.

Dr. Jabot recommends the use of a Krishaber canula which has a tent-like, slanting space on top while the point of attachment of the inner tube is situated in this tent-line space.

The red rubber drain is then inserted, which at the outset in the case of a child should vary from 4 to 6 cm. and range in diameter

from no. 15 to no. 20 (French), depending upon the degree of contraction.

One end of the drain is shaped like the mouthpiece of a flute with its sides rounded, and this is easily done by passing it over a flame. To keep the drain in place, a silk thread is passed about the center and its shortest part. In order to prevent the passage of food and liquids into the trachea, the drainage tube is tightly plugged with gauze for at least a month. Drs. Barlatier and Sargnon advise the use of vaseline with the drain. This makes it easier for the patient to wear the drain and at the same time the vaseline moistens the laryngeal cavity, facilitates the softening of the cicatricial tissues and prevents the formation of ulcerations resulting from pressure. Above, the drain should not extend beyond the superior border of the arytenoids.

The drainage tube is fastened to the Krishaber canula. The gauze, well saturated with vaseline, is then applied to prevent the sides of the wound from sticking to one another. The gauze is placed between the walls and the drain-tube and care must be taken that the gauze reaches as far as the superior angle. All this is again covered with sterilized gauze and cotton, which will absorb the secretions that are usually plentiful. A gauze bandage keeps the dressing in place.

The patient reclines with his head lowered a little. The canula is cleansed every hour during the first few days. The dressings are removed daily and if they are fetid, they are changed morning and evening. During two or three days the patient has only liquid and semi-liquid food, which is taken from the spoon, feeding cup or glass tube.

During the first week pulmonary and bronchial complications are apt to occur. The temperature must be watched; it becomes normal when sloughing ceases.

## 2. Dilatation.

Dilatation is now begun and must be slow and progressive. Every second day the drain is changed because it becomes fetid; at the end of a month the drain may be left in place for two or three days, then four, five or six days, depending upon the amount and fetidness of the discharge; care must be taken each time a new drain is inserted that the original length is preserved, if it is not at the end of the period of dilatation; at that time a shorter drain may be inserted, which should always be coated with vaseline, and attached to the

rings of the canula. If in certain cases at almost every change of the drain, one of a large diameter may be inserted, it is still necessary to remark that by a too rapid dilatation, a superficial gangrene of the new mucosa sometimes occurs. It requires several months to proceed from no. 15 to no. 30. (French.)

From the third day following the operation, the mucous membrane is red, swollen, and covered with purulent mucous, and the cicatricial tissues assume a grayish white color, indicating that these parts have softened and sloughed. At the time of each dressing it is necessary to carefully remove the sloughed tissues with tampons moistened with hydrogen peroxide, and to prevent the closing of the superior parts of the wound by means of the vaseline-covered gauze, a process which has already been described. The stitches are removed about the fifth day. At the end of a week, at the base of the wound, a reddish tissue covered with granulations may be seen. This budding lasts about one month. The cicatricial tissue then begins to disappear, the larynx and the trachea begin to assume a regular caliber; the mucosa is less mushy, and the edges of the wound are covered with skin from without toward within. The dressings which until now have been made daily and every other day, are changed every second and third day. It is necessary to notice carefully the epidermization, that must come about regularly, and for this reason, at the very edge of the skin formation the granulation tissue is touched up with nitrate of silver, as is the tracheal spur when it obstructs the light in the canal. To avoid a closure of the wound superiorly, Dr. Sargnon advises a separation of the sides at each dressing in order to insert the drain well and to pack in tightly the vaseline-covered gauze to the very level of the superior angle. If the closure is inevitable, it can be remedied by the bistoury under local anaesthesia. During the process of epidermization the drain must be introduced from below upward between the vocal cords. The secretions diminish; the epidermized mucosa becomes supple, solid and less red, the skin tends to re-enter the laryngo-tracheal tract, while the cartilage reforms. The patient can be left momentarily without the canula and drain, in the meantime closing the fistula with gauze, and replacing the drain stuffed with gauze by a drain which is not closed. The patient begins to breathe without a drain (which ought to be about the size of no. 30, French), through the fenestrated canula, which he now wears in place of the Krishaber tube. When the patient is able to breathe for a certain length of time through the mouth, except during the night, the

canula may be removed and the opportunity for an autoplasic is at hand.

### 3. The Autoplasic.

An autoplasic is indicated because of the possibility of the wound-surfaces uniting after cauterization, or after freshening the edges of same.

Following the method of Dr. Larrey, two little flaps are detached from the sides of the fistula. These are brought back to the median line over the fistula where they are sutured, or better yet, the procedure of Nélaton<sup>10</sup> is employed.

Two curved flaps are made to close this fistula, one taken from above, and the other from below the border of the fistula. The flaps are made of sufficient length so that the edges may meet over the fistula. The skin along the lateral walls of the fistula is loosened and the edges freshened and drawn by several sutures to meet in the median line so that it may be super-imposed over the flaps just made. Killian's method does not differ much from the foregoing. It consists of two vertical lateral incisions several cc. distant from the median line, an incision along the two sides of the wound which is freshened, except at the orifice of the canula.

Where there is a lack of tissue, the flap is made from the adjacent cartilage. In order not to destroy too much tissue, a part of the original incision is allowed to close. The rubber T drain recommended by Killian is then inserted, care being taken to place the vertical part in the trachea and the horizontal portion in the tracheal orifice, after which the tracheal fistula is closed by sutures along the median line, taken both deeply and superficially. The deep sutures are made with catgut; the other with wire. In cases of large dilatation, the Killian drain can be dispensed with, keeping a tracheal opening for safety's sake in which an extremely small canula is placed.

### 4. The provisional tracheal opening maintained for safety's sake:

The patient must be carefully watched. In case of accident, owing to the maintenance of the opening, the tracheal orifice can easily be dilated, by gently pulling at the skin at each side and, when necessary, by introducing into the trachea, following the method of Pieniazek, a drain rounded at each end and kept in place by safety pins; or, better still, a soft rubber canula made by Reiner of Vienna, may be used as suggested by Pieniazek. A simpler procedure is that employed by Dr. Sargnon, who uses a canula which along its ends

is straight and slightly curved in the middle. If at the end of several weeks no respiratory disturbance has set in, the opening is allowed to close; if necessary, the edges are freshened up.

Among the sixteen or seventeen cases thus far reported, inclusive of the reports of Jaboulay and Beco, but one death has resulted from gangrene and in only one case reported by Jaboulay did the cicatricial tissue reform, but in this case, the rubber drain was not used.

The lengthy treatment, which, in course of time will be improved, the possibility of bronchial and pulmonary complications during the first few days, the displacement and obstruction of the drain, the formation of tissue, the restlessness of the patient, the loss of timbre in the voice, which is heard as a whisper, though entirely intelligible, are inconveniences which, to a large extent, will be remedied. The advantages of laryngostomy make it a procedure of great benefit in serious cases of stricture of the larynx in patients wearing a canula, as well as in some forms of laryngeal tuberculosis that require energetic local treatment, where endo-laryngeal medication cannot be tolerated, also in recurring cases of papilloma, which, up to this time, have been treated by laryngo-fissure and in those cases of malignant tumors, mentioned by Dr. Grossmann.

If this operation requires long and delicate after-treatment, there is ample recompense in the constant general improvement in the patient, in the re-establishment of the respiratory functions, which no longer necessitates the use of the canula, that of itself is often the cause of fatal results.

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#### Foreign Body in the Right Bronchus. E. WINCKLER. *Deutsche med. Wchnschr.*, Feb. 9, 1907.

A woman 58 years old had aspirated two pieces of bone; the accident was followed by a foetid bronchitis. Two months later the author removed the foreign bodies by direct bronchoscopy under local anesthesia. The operation was complicated by the large quantity of pus which continually entered the tube during the manipulations. The patient made a complete recovery.

YANKAUER.



## FIBROMA OF THE TRACHEA.\*

BY WILLIAM E. SAUER, M.D., ST. LOUIS.

Fibromata as well as other new growths of the trachea, are not common occurrences. The majority of our American text books of the diseases of the nose and throat make no mention of them. Von Bruns, in his article on the neoplasms of the trachea in Hymann's *Handbuch der Laryngologie und Rhinologie*, states that tumors of the trachea are comparatively rare. He found among his records 300 laryngeal, and only 7 tracheal tumors. His review of the reported cases shows only 102 benign, and 45 malignant neoplasms of the trachea. Schech states in his *Krankheiten der Kehlkopfes u. d. Luftröhre*, that new growths of the trachea may be classified as rare diseases. Moritz Schmidt found among 58,879 nose and throat patients which had come under his observation during 18 years, only 7 new growths in the trachea. Semon found among his classified reports of 10,000 benign laryngeal neoplasms, only one tracheal tumor to every 100 laryngeal. The case which I shall here relate is therefore deemed to be of sufficient interest to report in detail.

Charles B., age 74, a retired police officer, born in Germany, was referred to me on Jan. 6, 1906. He had always enjoyed good health with the one exception, that he had had some trouble with his right eye, which was removed in 1882. (I learned later that this was a sarcoma of the conjunctiva; the enucleation had been performed by Dr. Alt of St. Louis.) Since that time he had always enjoyed good health.

The family history is negative. For the past 5 or 6 months he had been more or less annoyed by an irritative cough, but this had not disturbed him in any degree until about a month ago, when the cough began to annoy him when lying down. He also noticed that there was considerable difficulty in breathing and he would become very short of breath when walking up a flight of stairs. He consulted his family physician, who diagnosed his trouble as a chronic bronchitis. The patient was given small doses of potassium iodide, but his cough became more aggravated, disturbing him greatly at night. The breathing became more difficult, and at times it seemed as though he could scarcely breathe at all. On examination I found him to be well nourished, weighing about 180 pounds.

\*Presented as a candidates thesis before the Thirteenth Annual Meeting of the American Laryngological, Rhinological and Otological Society, May 30-June 1, 1907.

He claimed not to have lost any weight. The respirations were distinctly audible, and stertorous in character; his voice was somewhat hoarse. The slightest exertion brought on an attack of dyspnoea. The laryngoscopic examination revealed nothing abnormal in the larynx; but in the trachea a mass could be distinctly seen situated just above the bifurcation on the anterior wall; occupying at least two-thirds of the lumen of the trachea. The surface of the tumor was uneven and appeared somewhat pale. Considering the age of the patient and the appearance of the tumor. I suspected it to be malignant. I observed the patient for a few weeks and made repeated examinations; I also attempted to make a direct examination with the Killian tracheoscope, but found that the patient could not stand this examination. During this time the cough had been getting more severe and the breathing more embarrassed; even the slightest exertion brought on an attack of dyspnoea. The patient found that he could rest more comfortably when lying on the abdomen. I had been seriously considering an attempt at removal of the growth under a general and local anaesthesia, but was deterred from this upon the advice of the internist who saw the case with me. He strongly advised against any operative interference owing to the advanced age of the patient and the presence of a well-marked myocarditis. The dyspnoea became so alarming and the patient was beginning to be very nervous, and insisted on having something done.

He was sent to the hospital and on Feb. 12th a low tracheotomy was performed under primary chloroform anaesthesia. While on the table it was very difficult for the patient to breathe, and the tracheotomy had to be performed very hurriedly. After the trachea had been incised the respirations suddenly ceased and the patient became pulseless, and markedly cyanotic. Knowing that the obstruction was low down in the trachea, I quickly introduced a Killian bronchoscopic tube into the trachea, with the idea of passing the obstruction, so as to allow the air to pass through the tube. As soon as the tube had reached the vicinity of the bifurcation there was a sudden expiratory effort, and a portion of the growth was expelled through the tube; a second mass quickly followed. The patient began to breathe and the cyanosis began to disappear. Heart stimulants were administered and the pulse could be felt at the wrist. After a few minutes the patient's condition was fairly good. I attempted to get a view into the trachea, but owing to the rather profuse hemorrhage this was impossible. I then withdrew the tube

and the hemorrhage gradually ceased. The patient developed a small pneumonic patch in the right lower lobe, which cleared up in about two weeks. There was a marked improvement in the breathing, and there was no dyspnoea; the tracheotomy wound was allowed to close. The patient soon regained his former health.

The method of procedure I had intended to follow was to introduce a Killian tube down to the mass and remove it with a cold snare, which I had had made for the purpose; or failing in this I intended to remove it piecemeal with the biting forceps of Killian. The two masses which were expelled through the tube were about  $1\frac{1}{2}$  cm. long by  $\frac{1}{2}$  cm. thick. They were cherry red, and had the macroscopic appearance of a papilloma. They were given to the pathologist, Dr. Gradwohl, who reports as follows:

"I beg to report that microscopical examination of the growth removed from the trachea submitted to me by you fails to reveal any signs of malignancy. The growth appears to be a simple polypus covered with normal mucous membrane, and showing a very slight amount of round cell infiltration. Fibrous tissue predominates in it. I made sections from three different places, all showing about the same picture. A slight deposit of hemosiderin was observed in some places."

The patient left the hospital on March 4th. An examination revealed that there was still a mass on the anterior wall of the trachea, occupying nearly one-half of its lumen. The patient claimed that he felt no inconvenience and there was no shortness of breath, even after exertion. A month later I noticed that there was a slight increase in the size of the growth, and it appeared to be extending upward along the anterior wall, but not encroaching on more than half the lumen of the trachea. The general health of the patient is surprisingly good. On December 28, the patient again returned stating that he had noticed during the last few weeks, after an exposure, that there was considerable difficulty in breathing, especially at night. The examination showed that there had been a considerable increase in the size of the growth, and that the upper portion of the growth seemed to have extended up as far as the 5th or 6th ring, and occupied more than half the lumen of the trachea. An examination of the chest reveals an acute bronchitis. The patient was given a sedative, and when I saw him on Jan. 3, there was a decided improvement both in the cough and the breathing, although there was no noticeable change in the trachea. At the present time the patient weighs nearly 200 pounds.

Von Brun's review of the literature in 1898 shows that up to that time, only 23 cases of fibromata of the trachea have been recorded. Since that time only 6 cases have been added to this list; including the case I have just reported, making 29 in all. I shall review these cases briefly, in the chronological order of their report.

CASE 1. The first fibroma which is also the first new growth of the trachea recorded, is the case reported by Lieutaud, in 1767. The case was that of a boy, in which a polypus with a long pedicle, having its origin in the trachea, had been carried into the glottis by the expiratory air current, causing sudden death.

CASE 2. Stallard reports the case of a man aged 40 years, admitted to the hospital April 25, 1843, in a condition of general weakness, with symptoms of bronchitis. He had been asthmatic a long time. Patient died four days after entering the hospital after a fit of coughing which lasted an hour. Autopsy showed emphysema of the lungs. The bronchioles were healthy, but the right and left divisions of the trachea were congested. In the trachea there was a polypus about the size of an almond.

CASE 3. Reported by Rokitansky. Patient female, age 35 years; mother of two children. Had noticed a change of voice for 4 or 5 years, and finally at intervals lost her voice entirely. In March, 1844, had a spell of suffocation; there was dyspnoea and pain upon making an effort to cough. A polyp was discovered between the cords and another further down in the trachea. A tracheotomy was performed and a canula was inserted; the patient made a good recovery but the voice remained the same. A few months later the patient died of a follicular enteritis. Autopsy showed that the original fibroid had been attached to the trachea just below the larynx.

CASE 4. Smoler reports a case, male, age 22, well nourished. Some years before had had an attack of catarrhal pneumonia during which, hemoptysis with febrile symptoms had occurred. Later on these symptoms were reproduced without any apparent cause. The patient was almost constantly suffering from asthma; an examination of the lungs by percussion revealed a tympanic sound in the right clavicular region. Auscultation revealed some rales; the heart was hypertrophied, the abdominal organs were normal. There was short breathing and palpitation when ascending stairs. Violent fits of coughing, cyanosis, and sweats with purulent expectoration. Patient has a good tenor voice and was able to sing. Parents had died of "lung disease" at advanced age. Autopsy, lungs filled with

reddish brown fluid; no evidence of tuberculosis. Bronchi dilated and filled with fluid. Heart cavities slightly dilated. The finger introduced into the trachea encounters a tumor the size of a large nut, which completely obstructed the organ. It has a broad base and extends from the 1st to the 7th cartilage. Diagnosis: Fibroma of the trachea, confirmed by microscopic examination.

CASE 5. Reported by Fifield. The patient was first seen at her confinement in 1857, then 16 years old and healthy. Father asthmatic. Two years later began to have attacks of asthma, which increased in severity until January, 1860, when well marked symptoms of hysteria developed. The asthmatic paroxysms were remarkably severe. In March of the same year there was severe cough with bloody expectoration. Bronchial rales were heard all over the chest and the case was diagnosed as a tubercular condition. For several months the patient had not been able to lie down, but slept in chairs. On August 20, 1860, she developed measles, after which she remained in better health through the winter and spring. In July, 1861, the patient began to lose ground rapidly. She became very pale, dyspnoea became more marked and the feet and ankles were swollen. Auscultation showed besides the usual rales a well marked "bruit de diable" in the neck. Patient died on July 14, 1861. The autopsy showed, the heart healthy, lungs free from tuberculosis; no emphysema. The right bronchus presented superficial erosions. The smaller divisions were filled with semipurulent mucus. Upon examining the left bronchus the opening could not be found at first. It was perfectly covered by a firm rosy polypus the size of a small grape. The pedicle was attached to the trachea at the mouth of the bronchus, acting as a ball valve, allowing expiration but forbidding inspiration.

CASE 6. Tuerck had observed a patient, age 37, in private practice. There had been little difficulty in breathing. The patient died of pythisis. The autopsy revealed a tumor 6 mm. long, by 2 to 4 mm. thick, situated in the upper part of the trachea attached to the posterior wall. The diagnosis was confirmed by the microscope.

CASE 7. Reported by Gerhardt. Female, age 34. Never had any respiratory difficulty. In November, 1864, the patient died of acute yellow atrophy of the liver. At the autopsy there was found situated above the bifurcation at the level of the 8th ring somewhat to the left, a small polyp  $\frac{1}{4}$  cm. wide; by 1 cm. long.

CASE 8. Also reported by Gerhardt. A girl aged 25 was first observed in 1853. The first symptoms noticed were a shortness of

breath, which gradually increased; followed two weeks later by a cough. In the middle of October her breathing was much embarrassed. She was compelled to go to bed; keeping the upper part of her body elevated. She complained of pain in the breast and right side of the neck. The voice was deep and hoarse. A laryngoscopic examination in March revealed a reddish tumor in the trachea near the 6th ring on the left side, only a small space was left for respiration. On March 29 a sound was passed. The breathing became more labored and the cough aggravated. On March 31, the dyspnoea increased, with cyanosis and bloody expectoration. Her condition grew worse and she finally died April 5th. The autopsy showed an acute bronchitis, emphysema of the lungs and some oedema. The tumor was 3 cm. long, by  $1\frac{1}{2}$  cm. wide; the pedicle was 2 cm. in length.

Mackenzie reports the following four cases of tracheal fibromata:

CASE 9. Male, aged 41, entered hospital in March, 1865, with hoarseness and slight dyspnoea. The larynx was found congested, and was treated with astringents. On October 16th a growth was seen about the size of a bean, occupying the 2nd and 3rd ring of the trachea. In November several unsuccessful attempts to remove it with a forceps were made, but on December 21, 1865, the growth was touched with electric cautery; one week later no sign of it could be seen.

CASE 10. Female, age 10. First applied at hospital suffering from dyspnoea and weakness of voice. A growth about the size of a pea was seen on the 3rd ring of the trachea, rather to the left side of the median line. On attempting to remove the growth with the cautery, the patient moved and both cords were injured. The patient did not return for further treatment.

CASE 11. Age 37, was seen in March, 1874. He was suffering from dyspnoea and hoarseness. A growth was seen just above the anterior commissure, which was removed with the forceps; a growth about the size of a currant was then seen occupying the 1st and 2nd ring of the trachea. The cricoid cartilage could be distinctly seen above it. After two failures the polyp was touched with the galvano-cautery; a week later no sign of it was seen.

CASE 12. Male, aged 45, applied at the hospital on June 15, 1876, suffering from dyspnoea. A smooth red polyp about the size of a grape was seen covering the 4th, 5th and 6th rings of the trachea. A tracheotomy was proposed but refused. The patient died three months later of apoplexy. No post mortem.

CASE 13. Man, age 63, was first seen by Ingals in 1881, with symptoms of laryngitis. In February, 1883, the author discovered a growth in the trachea 4 to 5 cm. below the larynx. It was sessile and flattened in form, standing out from the surface of the trachea about 5 mm. and occupying an area ranging from 8 to 12 mm. in its various diameters. It was of a reddish color and granular. There was no inconvenience in breathing and no noticeable size of the tumor when seen six months later. There was no attempt at removal.

CASE 14. Reported by Stoerk. This case was that of a midwife 40 years of age, who had difficulty in breathing. A laryngeal examination revealed a fibroma the size of a bean in the upper part of the trachea. The patient refused a tracheotomy, so was allowed to go without further treatment.

CASE 15. This case, reported by Masini, has been considered a typical one. It was a fibro-myxoma situated upon the 1st ring of the trachea and on phonation could be seen below the cords. It was extirpated through the mouth with a modified Mackenzie's forceps under cocaine anaesthesia.

CASE 16. Lewin presented a patient who had been wearing a tracheotomy tube for 24 years. The patient had always been perspiring, coughing and subject to fits of suffocation. The laryngoscopic examination revealed a redness and swelling of the vocal cords and a fibroid tumor which grew out from the posterior wall of the trachea. After the tracheotomy the patient showed great improvement, could speak well and breathe well. Further operation was refused by the patient.

CASE 17. Langlet mentions a case of a man, age 60, who was seen in 1886 with marked symptoms of obstruction, cough and pain on swallowing. He also complained of a feeling of foreign body. The voice was hoarse. Auscultation revealed generalized mucous rales. No abnormal signs were detected by percussion. The patient was given jaborandi in two gram doses, which seemed to relieve him for a time. A laryngoscopic examination showed no foreign body nor tumor of the vocal cord. The patient began to have severe attacks of suffocation and succumbed July 14, 1886. The autopsy showed a small white lobulated tumor the size of a small nut 3 cm. above the bifurcation of the bronchus. A part of this tumor had become detached and fixed itself in the larynx, causing a rapid asphyxia.

CASE 18. Braun reports a case, male, age 40, sent to the author in February, 1889, by Dr. Escher with a diagnosis of tracheal



polypus complicated with laryngeal troubles. The history showed that the patient had been hoarse for ten years without any other noteworthy symptoms. He began to have a feeling of pressure in the throat, constant coughing and dyspnoea when lying down or sleeping. The hereditary history of the patient was negative. Inspection showed a short thick neck "and highly arched tongue." The opening of the larynx was narrow, the breathing was labored. Upon deep inspiration it was possible to see a thick white tumor 1 cm. below the anterior commissure, which moved backwards and forwards. It was found that a 20 per cent solution of cocaine not only would not anaesthetize the growth but produce hyperaesthesia. Five weeks later the author removed the growth with a forceps. The patient made an uneventful recovery and there was no recurrence.

CASE 19. Reported by Oazmann, in which a polypus of the larynx and of the trachea was extirpated at one time. This was followed by a recurrence. Laryngotomy and cauterization were next done; this was also followed by a recurrence. The removal was then made through the mouth and the patient given potassium iodide internally. No recurrence after five years. The age not stated.

CASE 20. Bidwell showed to the Pathological Society of London a specimen of a fibroid polypus of the trachea. It was taken from a boy five years of age who died from asphyxia at the Evelina Hospital for Children. The polypus was the size of a small marble and was attached to the posterior wall of the trachea by a distinct pedicle. On microscopic examination the growth was found to consist of fibrous and cellular elements without any distinct evidence of sarcoma, except that some of the nuclei appeared to be becoming spindle shaped. There was no sign of disease in any other organ; the child had suffered from symptoms for fourteen days and tracheotomy had been performed without relief two days before death. This was the first case of fibroid polypus of the trachea shown to the Society.

CASE 21. Avellis reports a case, male, 50 years of age, who had been suffering for a long time with a large struma and marked difficulty in breathing. The author was called because the patient had coughed up some blood. Pharynx and nose hyperemic. The left vocal cord was paralyzed and fixed. The larynx was markedly scoliotic, and the trachea involved lower down. The author discovered a body which moved upon breathing but an accurate

examination could not be made. The source of the hemorrhage was not discovered. A few days later the patient developed symptoms of pneumonia. The autopsy showed that the left vocal cord was somewhat atropic and fibrous. Near the 7th and 8th tracheal ring the polypus was seen; it was like the whole of the tracheal mucosa, somewhat red, not bleeding and could be moved easily by the sound. Later examination revealed a beginning sarcoma.

CASE 22. Krieg in his *Atlas der Kehlkopfkrankheiten* gives an illustration in which a fibroma situated just above the bifurcation on the posterior wall of the trachea almost obstructs the entire lumen. I was unable to find anything further regarding the case.

CASE 23. Schmidt in speaking of fibroma of the trachea in his *Krankheiten der obern Luftwege* refers to Tuerk's and Stoerk's cases, and then states that Boeckenhimer had seen a lympho-fibroma in the trachea which was operated upon with good results.

CASE 24. Eppinger reports the case of a man aged 23 who had died suddenly; a round tumor as large as a hazel nut was found on the posterior wall of the trachea 4 to 5 cm above the bifurcation. The diagnosis was verified by the microscope.

CASE 25. Jurasz reported a case of a male, age 38 years, who had been suffering from hoarseness of a slight degree for more than a year, but which in the last two months had become troublesome. The breathing was somewhat impaired. On laryngoscopic examination a polypus the size of a small hazel nut could be seen which had its origin in the trachea. The growth moved with each inspiration and expiration. No attempt at removal had been made.

CASE 26. Rosenfeld mentions a case in which a polyp the size of a pea, had its origin on the anterior wall of the left bronchus, and after an attack of coughing could be seen lying over the bifurcation.

CASE 27. Ogle reports a case of a child one and one-half years of age, admitted to the hospital apparently in good health, who was readmitted the same day with dyspnoea. The mother said the patient had several "spells of short breathing" on the way home. A second tracheotomy was done and the patient died. A tumor was found attached by a pedicle at the site of the first tracheotomy. The author believes that the asphyxia might have been due to a cold after leaving the hospital; or it might have been due to a spasm. The tumor seems to have been a fibroma.

CASE 28. Marcel and Zigura report a case of fibroma of the trachea in a patient aged 33. The tumor was the size of a hazel nut.

It was removed and no recurrence followed. The tumor was examined by Babes, and pronounced "a typical fibroma."

An analysis of the reported cases shows that fibromata may be found at all ages. One patient was below 2 years; three patients between 5 and 15; three between 20 and 30; seven between 30 and 40; three between 40 and 50; two between 60 and 70, and one over 70; in eight the age was not stated. The sexes are about equally divided. Eleven of the cases were males, and seven females, and in ten the sex was not recorded.

The size of the growths varies from that of a small pea to that of a large nut. In the case of Smoler, the growth completely obstructed the trachea. The location of the tumors was also a variable one, as they were found in all parts of the trachea. In one of Mackenzie's cases the growth was attached to the first ring of the trachea. In Rosenfeld's case the origin of the growth was in the left bronchus.

The symptoms varied from a slight hoarseness, weakness of voice, cough, dyspnoea, asthmatic symptoms, attacks of suffocation and asphyxia, ending in death. In nine of these cases death had occurred from suffocation. The amount of disturbance depends on the size and location of the growth. In Langlet's case there was a feeling of foreign body which the patient attempted to cough up; this cough was followed by spells of suffocation. In Rokitsky's case there was pain in the chest on coughing. In Smoler's case there were symptoms of catarrhal pneumonia without fever; these attacks were brought on without any apparent cause. In Braun's case there was hoarseness for ten years without any other symptoms. Fifield's case showed marked asthmatic symptoms for more than three years and the case was believed to be tuberculosis. In Ingal's case, a growth situated 5 cm. below the larynx and extending 5 mm. out from the surface of the trachea and occupying an area varying from 8 to 12 mm. in its various diameters, produced no symptoms. In four cases reported by Mackenzie the growths varied in size from a small pea to a grape. In all the cases there was a noticeable dyspnoea with hoarseness.

A positive clinical diagnosis was made in sixteen of these cases; the others were diagnosed on the post mortem table. Five of the cases were recorded before the discovery of the laryngoscope; these were diagnosed at the autopsy. Tuerck was the first to see a tracheal growth in the laryngeal mirror. With the further development of the direct methods of examination more of these cases will be recorded.

A histological examination was made in only nine of the cases. In Ogle's case the growth had its origin at the site of the tracheotomy wound, and as a histological examination was not made this case was in all likelihood a granulation tumor, and not a true new growth. In the case of Avellis a beginning sarcoma was discovered later. In Bidwell's case some of the nuclei appeared to be becoming spindle shaped. This seems to bear out the statement of Proebsting that no conclusions should be drawn from a macroscopic appearance of these tracheal growths. He reports a case in which a polyp with a small pedicle had been coughed up and brought to him by the patient. Proebsting could distinctly see the remaining portion of the pedicle in the trachea. The macroscopic appearance was that of a typical mucous polyp; a microscopic examination, however, revealed carcinomatous elements in the interior of the polyp. The patient died nine months later of carcinoma of the trachea and left lung. In the case reported above by me, sections were made by four different pathologists, and no evidence of malignancy was found in any of the slides examined.

Attempts at removal were made in only six of the cases. In Braun's and Massini's cases the growths were removed through the mouth by forceps; they were situated high up in the trachea. In Oazmann's case the growth was first removed with the forceps through the mouth. A recurrence followed. A thyrotomy was done followed by a second recurrence. A third removal was made through the mouth and proved to be successful. In two of Mackenzie's cases the growths were destroyed by the galvano-cautery. In one case reported by Mackenzie the vocal cords were injured in attempting to cauterize the growth; further attempts were then refused. In Lewin's and Ogle's cases a tracheotomy was done, but no attempts at removal were made. In Gerhardt's case a sound was introduced into the trachea; death followed several days later. In my own case a partial removal was done with relief for eleven months. The patient is still quite comfortable.

Regarding the prognosis of these tumors, the cases of Proebsting and Avellis should again be borne in mind, and a careful microscopic examination should not be neglected, even when the macroscopic appearances are typical. A great advance in the operative technic of these cases has been made through the development of tracheoscopy and bronchoscopy, as done by Killian and others. With the aid of these the removal of the growths situated low down in the trachea or even in the bronchi themselves is no longer an impossibility.

Humboldt Building.

## DO WE HEAR OURSELVES AS OTHERS HEAR US.\*

BY G. HUDSON-MAKUEN, M.D., PHILADELPHIA, PA.

The faculty of hearing in so far as it relates to the faculty of speech may be divided into two classes, subjective hearing and objective hearing. By the former is meant the hearing for one's own speech at the time of its production by the natural organs, and by the latter is meant the hearing for the speech of others and the reproduction of one's own speech as in the phonograph.

That there should be a difference in these two classes of hearing is apparent when we consider their physiology. In subjective hearing, the sound waves are received not only through the external auditory canal by air conduction and through the external bones of the head, but also and in large measure directly from the organs of speech through the Eustachian tube and through what may be called internal bone conduction. In objective hearing the sound waves are conducted through the external auditory canal, through the bones of the head and to some extent also, when the nostrils are open, through the Eustachian tube, but the direct effect of the actual vibrations in the laryngeal, oral and nasal cavities so manifest in subjective hearing is entirely lacking.

In addition to these physical differences between subjective and objective hearing there is a less tangible, but no less actual psychical difference. A man hears the speech of others with a more or less critical ear, while to his own speech he turns a tolerant and even approving ear. He thus learns not to notice errors in his own speech that he would at once detect in that of others and he learns even to be deceived into thinking that his own mannerisms of speech bear a close resemblance to normal speech. In other words he grows accustomed to his own speech, he is prejudiced in its favor and however faulty it may be it is pleasing to him; and he keeps on talking in the same way.

That there is a purely physical difference between subjective and objective hearing, however, is well illustrated by the hearing of one's speech in the phonograph. The difference is so marked that the objective phonographic reproduction is not generally recognized.

\*Read before the 57th Annual Session of The Medical Society of the State of Pennsylvania, Reading, Pa., Sept. 23-26, 1907.

Actual clinical proof of the fact that we do not hear ourselves as others hear us is not wanting. My attention was first called to it by a case of falsetto voice. The patient had just passed his fifteenth birthday. He was referred to me by a well-known physician, who had tried the various methods of treatment, both systemic and local, but they had no effect whatever upon the condition. With a little assistance in the adjustment of the vocal and respiratory organs the patient was enabled easily to produce single tones having the normal chest resonance, and when I complimented him upon his success he said: "But that is not the way you want me to talk, is it?" and I said "Yes; why not?" He said: "That voice sounds to me harsh and disagreeable," and it was several days before he could become accustomed to the normal chest tones and accept them for the thin piping treble of the falsetto voice.

A striking example of defective speech that was supposed by the individual to be normal, was that of a case that I published some years ago. The boy's speech, at 15 years of age, bore no resemblance to normal speech, but was in all respects like a foreign language. He gave his name and address "Thahti Thou, purti thah thati pahthi," for Alfred Lawrence, 3918 Parrish street, and he gave the days of the week, "Turdi Thahdi, Tudi, Thadi, Bodī, Bahdi, Tahdidah." His mother had learned to translate this jargon, and the boy was entirely unconscious of the fact that it was unlike the language of his fellows, which, by the way, he could understand perfectly, and which he could spell and write with considerable fluency.

Since my experience with these two cases I have examined hundreds of people having similar defects, and I am convinced that no matter what may have been their individual peculiarities of voice and speech, they were entirely unconscious of them and satisfied with their own efforts, until perchance they had been informed of their deficiencies, or their defects had resulted in injuries to the organs employed. This knowledge of a deficiency in voice or speech often comes as a great shock to patients. One small boy of nine who had been told at school that his speech was defective said to his father that he would rather die than not be able to talk as other boys talk.

We do not hear ourselves as others hear us any more than according to the poet we see ourselves as others see us, and so far as our immediate personal happiness is concerned we may be equally fortunate in both cases, but nevertheless the fact must lead us into many an awkward position. The man that persists in talking

in the falsetto voice and with stammering speech, although blissfully unconscious of his condition, is quite as ridiculous in the eyes of his fellows as was the woman in the Scottish kirk upon whose beautiful bonnet Robert Burns beheld the "wee lousie," and to paraphrase the poet's lines suggested by this incident, we may say

Oh, wad the power the giffle gie us  
To hear oursel's as others hear us!  
It wad free monie a blunder free us,  
And foolish notion.

That we do not hear ourselves as others hear us is not only an interesting but a very important fact, especially as bearing upon the training of the voice and the correction of the various forms of defective speech. Good hearing is the natural accompaniment of good speech and defective hearing invariably results in defective speech.

It has not been my purpose in this paper to deal with the inaccuracies of hearing that are due to structural defects or pathologic conditions of the organs, but only to call attention to a peculiar mental freak of hearing that seems to determine in many cases the character of voice and speech, and that must be corrected by educative measures before improvement can take place. It is something like word deafness, but different from it in that the patient is deaf only to certain sounds of his own production, whereas these same sounds when produced by others he hears accurately and well. One using the falsetto voice, for instance, will not endure with any degree of complacency an exact imitation of his method of speaking by another person.

Hearing in its finality is a mental process, and like all mental processes, it is susceptible to training. It is in many respects analogous to the sense of sight. We hear in great measure what we have learned to hear and what we desire or will to hear, and it is of prime importance that we learn to hear ourselves aright, because the inability to do this leads to grave defects of voice and speech.

1627 Walnut street.



## AN INTRANASAL METHOD FOR OPENING THE FRONTAL SINUS ESTABLISHING THE LARGEST POSSIBLE DRAINAGE.\*

BY R. H. GOOD, M. S., M. D., CHICAGO.

The principal points of advantage in my operation are:

*First:* The establishment of the largest possible opening from the frontal sinus into the nasal cavity.

*Second:* The practical impossibility of injuring the dura.

*Third:* The removal of all the anterior ethmoidal cells to give better drainage; as well as to remove diseased cells which may be associated with frontal sinusitis and to prevent an acute or a chronic ethmoiditis following a frontal sinus operation.

*Fourth:* The possibility of curetting practically the entire sinus and subsequently making topical applications to the mucous membrane in the sinus if necessary.

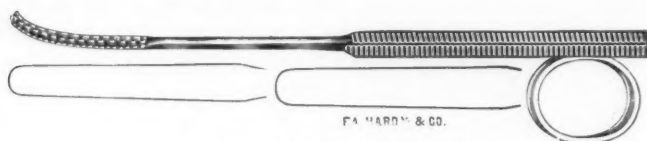


Fig. 1.—Frontal sinus rasp.

The instruments used in this operation are four frontal sinus rasps, right and left; two tapering chisels; three protectors; and long, flexible curets.

The frontal sinus rasp (Fig. 1), is made on the same principle as the old-fashioned coarse horseshoe rasp, from which I derived the idea. It is slightly curved at the rasp end to fit into the frontal sinus and the teeth are on the longitudinally concave surface, pointing toward the handle, so that when traction is made on the rasp, the bone anterior to it is rasped away, as illustrated in Fig. 5. The posterior and orbital surfaces of the rasp are perfectly smooth and flat.

The chisels (Fig. 2) are short, curved and tapering. The handle at the chisel end is very slender so that the chisel may be manipulated under the direct vision of the eye. The corners are tapering as well as blunt, so that if the angle of the chisel should strike a bony surface it would tend to glide off instead of penetrate.

\* Read before the Chicago Laryngological and Otological Society, Feb. 11, 1908.

The protectors (Fig. 3) are made of brass and in three different widths, as illustrated. They can be bent easily into shape on the flat, but not sideways.

The operation consists of the following steps:

I. The removal of the middle turbinate. This can be separated from its attachment to the ethmoidal labyrinth with a curved knife such as I use in tonsil resections, or with Kyle's nasal saw; and then removed with forceps or snare.

II. The removal of the ethmoidal cells and the unciform process of the ethmoidal bone.

I have found Dr. Ballenger's ethmo-cribriform knife very valuable for separating the ethmoid cells from the cribriform plate. This instrument is introduced into the ethmoidal labyrinth just below the superior turbinate and drawn upward to the floor of the skull and then forward to the frontal sinus.

The unciform process of the ethmoid is removed from its attachment above by first putting a probe into the sinus and then



2.—Chisel, showing in outline exact size.

with the larger sized chisel (Fig. 2), the delicate structure can be separated above by simply making pressure on the chisel and at the same time giving it a slight rotary movement. The unciform plate and ethmoidal cells are now removed as thoroughly as possible with biting forceps such as Hartmann's and then curetted out so that they are removed up to the floor of the skull.

II. Chisel off a little of the frontal process of the superior maxilla and separate the anterior medial wall of the ethmoidal labyrinth from its attachment to the frontal spine.

The anterior portion of the medial wall of the ethmoidal labyrinth at its attachment to the frontal spine, being impossible to bite out with forceps can easily be removed with the small chisel.

With the unciform plate out of the way almost any diseased frontal sinus can be probed.

One or two protectors (Fig. 3) are introduced into the sinus and the chisel held as illustrated in Fig. 4.

The chisel is held in a direct line with the protector and under the direct vision of the eye. It is held at a tangent to the orbital

wall of the sinus so that it is impossible to injure the cribriform plate as the chisel is directed externally to this structure.

The lachrymal bone and lamina papyracea of the ethmoidal bone are protected by an assistant putting his finger into the orbit who can notify the surgeon if the chisel is touching these structures. As stated above the chisel is held at a tangent to the orbital wall and being curved, with the corners dull, it would tend to lift the orbital periosteum instead of penetrating as the case would be with a sharp-cornered straight chisel.

The internal table of the frontal bone is the important structure to guard against injury, and this is protected first by one or two protectors, past which the chisel cannot go if held in a direct line with it. In the second place there is a considerable distance between the frontal process of the superior maxilla and the internal table of the frontal bone, so that the chisel being firmly held by the hand, loses its momentum before reaching the internal table. In the third place the corners of the chisel are blunt and tapering so that if the corner of the chisel should strike the posterior wall it would tend to glide off instead of penetrate this structure. Again I advise using a very small mallet and make light taps so that one has absolute control of the chisel.



Fig. 3.—Frontal sinus protectors.

IV. Rasping away the lateral aspect of the frontal spine and thereby enlarging the space between the spine and the orbital wall of the sinus.

The rasp (Fig. 1) is introduced into the sinus externally to the frontal spine (not back of the spine, which is impossible), and internally to the orbital wall (Fig. 5). By rasping forward and towards the septum the space between these two structures is enlarged at the expense of the frontal spine. The rasp is perfectly smooth posteriorly so that the internal table cannot be injured, and one lateral or orbital surface of the rasp is smooth to prevent rasping through the orbital wall of the sinus. Care must be taken not to withdraw the rasp too far while rasping, as it will injure the septum.

The structures to be guarded are the lachrymal bone and the lamina papyracea of the ethmoid which is easily done by the surgeon putting his finger into the orbit while rasping.

V. Curetting the sinus if granulation tissue, polypi or tumors are felt in it. The curets must be long and flexible so that all parts of the sinus, except those back of trabeculae, can be reached.

The sinus, in ordinary cases is packed with gauze which is removed the following day, after which the patient is left alone. No matter how large one makes the opening into the sinus, it has a tendency to close, especially in cases with profuse purulent discharge.

In very chronic cases with profuse discharge and polypoid formation it is necessary to put in a tube to keep the ostium from closing with granulations. For this purpose I use a gold-plated tube made of coarse wire cloth as illustrated in Figure 6, which is left in the sinuses for variable lengths of time depending upon the amount of the discharge. The tube being sieve-like allows drainage into the walls of the tube, as well as through the end opening. The rough surface of the tube keeps it in place.

The operation can be performed under local anaesthesia by rubbing adrenalin chloride and crystals of cocain into the olfactory region and by injecting a small quantity of a 10 per cent solution of cocain in adrenalin chloride 1-1000 into the frontal sinus. It is, however, better to put the patient to sleep at the latter part of the operation when the frontal sinus rasp is being used. I operated my last two cases in this way and found it more satisfactory to the patient and myself.

It is necessary to use a Kierstein head-light as the ordinary concave mirrors cannot focus the rays into remote cavities.

The reaction following this operation is very slight, only in one case was there oedema in the region of the inner canthus, and patients who have been suffering with headaches or pain are instantaneously relieved, as illustrated by the following cases:

*Case I:* Miss F., Chicago, American, twenty-one years of age, and engaged in office work. Eight months before consulting me, patient sat up late on the porch and contracted a cold which was followed two days later by acute frontal sinusitis. During these eight months the patient complained of headaches almost every day. The pain started shortly after rising in the morning and continued for periods varying from one to four hours. She had three acute attacks during this time when her pain would be severe, and her left eyelid would swell so that she could hardly open the eye. Dur-

ing the last attack she was admitted into the Eye and Ear Hospital, where she was treated for iritis with atrophine, according to her statement. After leaving the hospital she was asked to return in a few weeks to have her eyes straightened by a tenotomy. Being afraid of an operation on her eye, she consulted me Feb. 20, '07.

On examination I found a drooping of the left upper eyelid, which varied in degree according to the severity of the pains. There was a manifest convergent strabismus but no paralysis of any of the muscles of the eye. With Maddox rod test it showed an esophoria of 14 per cent and a right hyperphoria of 5 showing an impairment of function of the superior oblique and the external rectus of the left eye, or in other words, an involvement of the 3rd, 4th and 6th



Fig. 4.—Showing chisel and protector in position.

cranial nerves. (I failed to note in this case whether the pupil was dilated, which occurred in two of my cases).

The sinus was very tender on pressure, the pain radiating to the left temple and occiput. Coughing and sneezing increased the pain in the sinus.

On examination of the nose the left nostril was practically obstructed by hypertrophy of both the inferior and middle turbinals and the latter was so large that the septum was pushed to the opposite side. Some secretions were seen under the middle turbinate, which, however, did not appear purulent.

Freer's transillumination lamp showed less illumination of the left than of the right sinus and the X-ray showed a greater density of the left sinus.

Spraying the nose with cocain and adrenalin relieved the patient for ten hours but was of no help thereafter.

Feb. 21st I removed the middle turbinate and passed a catheter into the frontal sinus to make sure that the ostium was patulous. The patient derived no relief from this operation and I allowed her to go for a month or more thinking that it might get well. April 4th I took her to the hospital and performed my frontal sinus operation under local anaesthesia.

Immediately after the operation the patient was relieved of pain, which has not recurred to the present time. Two months after the operation there appeared a polyp in the frontal sinus opening, which I removed and cauterized the base with stick silver nitrate.

The ptosis disappeared one day after the operation and there is only two degrees of esophoria instead of 14, and no hyperphoria.

I kept the patient at the hospital four days as I wanted an accurate record, and the patient kept under careful observation. During these four days the temperature was normal, except at 4 P. M., for the first three days, when it went up to 99. The highest pulse rate was 80. There was possibly the slightest amount of swelling around the inner canthus of the left eye the day following the operation but it was hardly noticeable and the patient was free from pain.

*Case II:* Mrs. McC., Chicago, forty-three years of age, complained of severe pain in the region of the right frontal sinus for the past six weeks. She consulted a specialist regarding her eyes, who sent her to a neuralgicist. She received treatments from the latter for about six weeks but gradually became worse until finally she was confined to bed and called in Dr. C. C. Rogers, who made a probable diagnosis of frontal sinusitis. Having known about my intra-nasal operation, the doctor referred the case to me in preference to operating himself by the external method.

On examination I found a marked ptosis of the right upper lid, paresis of the superior, inferior and internal recti muscles, the pupil was somewhat dilated and sluggish in reaction to light. Pressure over the right sinus caused severe, deep seated pain which radiated to the parietal region. The patient had a diplopia and with Maddox rods showed an exophoria of 16 but there was no hyperphoria.

Examination of the nose showed a deflection of the upper part of the septum to the right so that the middle turbinate was pressed upon. The turbinate was about normal in size and there was no discharge seen under the middle turbinate. With a probe in the sinus a grating could be felt as though there was bare bone in

the sinus. The X-ray showed greater density of the right sinus. On April 24, '07, the patient was admitted to the hospital and operated on the following day.

Immediately after the operation the pain left her and she enjoyed a good night's rest, for the first time in six weeks. The ptosis disappeared at the same time. The patient had a normal temperature all the time she was in the hospital except for the first four days, when it raised to 99.4 at 8 p. m. on the first day and 99 at 4 P. M. on the three following days.

After two weeks the patient had lost her diplopia even with the red disc test and she had an exophoria of 2 instead of 16. Her

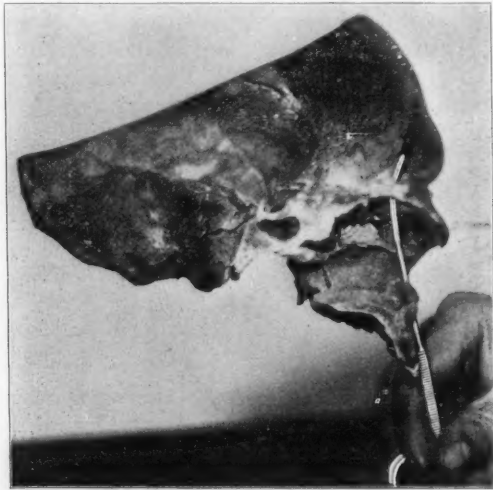


Fig. 5.—Frontal sinus rasp in position.

pupil remained slightly dilated but the superior, inferior and internal recti muscles resumed their action. Four weeks after the operation the patient was taken with pain which she described as being deep seated between the eyes and there was a slight oedema above and below the inner canthus of the right eye and a tenderness on pressure over the ethmoidal cells. She had a temperature of 100. I removed some of the anterior ethmoidal cells and the temperature dropped to normal and the pain stopped and the patient was well again. I consider that this was an acute ethmoiditis, so that I now remove the anterior ethmoidal cells at the time of the frontal sinus operation.



*Case III:* Miss M., twenty-nine years of age, was referred to me by Dr. Atkinson Sept. 27, '07. The patient complained of severe left-sided frontal headaches for the past year, especially in the morning, and gradually growing worse. She complained of an increased nasal discharge, which she thought was about the same in quantity from either side. Two months before the patient had an oedema on the left eyelid and excessive pain. The pain radiated to the occiput and was markedly increased on pressure over the left frontal sinus. The left pupil was dilated and reacted sluggishly, which the patient said had been the case since her trouble in July. On taking cold her headaches were more severe. The temperature was 99 1-2 at the time of the first examination. The left sinus on transillumination showed a shadow and the X-ray showed a greater density. There was no dropping of upper lid and no involvement of the extrinsic muscles of the eye.

On examination of the nasal cavity I found an enlarged middle turbinate on the left side and underneath it a small polyp. I could



6

not detect any secretions under the middle turbinate at this time.

On operating I found at least ten polypi filling the various ethmoidal cells which I removed thoroughly at the same time I performed the frontal sinus operation. Four weeks after operation the pupil was almost normal in size and its reaction to light practically normal.

I had difficulty in this case to keep the sinus open and the canal filled up with granulation tissue, and I may insert one of my gold-plated wire tubes to keep the passage permanently open. The patient remained in the hospital one week and had a normal temperature every day, except the first, when it was up to 99 2-5. There was no oedema of the eyes. The patient is now free from pain.

*Case IV.* Miss R, River Forest, Ill., thirty-six years of age, American, came to my office Jan. 1, '08.

Three years ago the patient had an acute Rhinitis, which was followed a few days later by severe pain and headache over her left eye. In five days these pains subsided but there was an increased discharge from the left nostril and for six months the

patient says she had a bronchitis, which I think was due to the pus causing a continued irritation in the pharynx. She has had a constant discharge during these three years, and occasionally a dull pain and headache over the left eye.

On Dec. 31, '07, she developed an acute frontal sinusitis with the following symptoms:

One week previous the patient was again taken with an acute coryza and the nasal passages were obstructed considerably. She complained of severe pain over the left sinus, which radiated to the occiput. She also complained of deep seated pain back of the left eye. There was marked tenderness on pressure over the left sinus. When blowing her nose the pain was felt mostly in the occiput, while coughing or sneezing increased the pain in the sinus. There was a slight drooping of the left upper lid, which varied according to the severity of the pain. The muscles of the eyes were normal and the pupil was not dilated.

On examination of the left nose the middle meatus was filled with a creamy yellow pus, which when washed out could be seen coming from underneath the middle turbinate. The latter was considerably enlarged and from below it there projected a polyp which seemed to grow from the infundibulum.

The nose was sprayed with adrenalin and cocain and the patient was asked to spray the nose three times a day with adrenalin chloride. The first treatment gave relief for eight hours and subsequent treatments failed. Freer's transillumination lamp showed a shadow over the left sinus and the X-ray plate was a little darker over the left sinus than the right.

On Jan. 3, '08, I removed the middle turbinate, polyp and the anterior ethmoidal cells and passed a heavy probe into the sinus. This operation did not give relief whatever and on Jan. 10, I performed my sinus operation. She slept well the same night and has not had any pain since. She remained in the hospital four days. Her record shows a temperature of 99 on the second day and normal the two following. There was no oedema of the eyelids following the operation.

72 Madison Street.

## A PLEA FOR CONSERVATISM IN THE TREATMENT OF CHRONIC EMPYEMA OF THE MAXILLARY SINUS.\*

BY T. W. MOORE, M. D., HUNTINGTON, W. VA.

There has been so much said and written upon chronic empyema of the maxillary sinus during the past year that it seems like "carrying coals to Newcastle" to try to add anything. Nearly all the recent literature to which I have had access has, with noticeable unanimity agreed upon the intranasal opening and treatment of this disease, and has decried the so-called Caldwell-Luc operation (which is usually accepted as the radical one) save in exceptional cases. To all of this I am in accord, but each writer has, it seems to me, vied with his confrère in destroying as much as possible of the nasal wall of this cavity, and it is remarkable the ingenuity displayed in devising new chisels, saws, drills, etc., for this purpose, each possessing some special advantage in the hands of its inventor, according to his special methods and skill.

Historically, it is interesting to trace the various ways and means of treating this malady since Nathaniel Highmore in 1651 described the sinus. Following William Cowper with his operation that still bears his name, (although he probably was not the first to open the antrum through the socket of a tooth), came Gooch and John Hunter, who independently proposed an opening through the nasal cavity, and a Swedish surgeon with an unpronounceable name who operated after the manner of Cowper, and then made a counter opening into the nose through which he passed a second canula, and so on down to the paper of Ziem in 1886, whose essay was the first to describe the frequent occurrence of this affection without the classical symptoms of pain, swelling and tenderness, and which was the beginning of our present methods. This is so striking when compared with the writings of to-day that Jonathan Wright, from whose book my historical references are mostly taken, says "I am sure any one, reading these accounts of operations on the Antrum of Highmore for suppurative disease, will perceive that all the recent procedures, which have been of late so exhaustively and frequently described, have been long anticipated in surgery."

Our critics have said "we move in a circle," to which our friends

\* Read before the Twelfth Annual Meeting of the American Academy of Ophthalmology and Oto-Laryngology, Louisville, Ky., September 26, 27 and 28, 1907.

reply "that it is a spiral, and each revolution finds us on a higher plane."

I am not here to-day with any new methods or appliances, but to cite a few cases treated by opening the antrum through the inferior meatus after the manner proposed by Krause in 1889, and washing the cavity daily with normal salt solution. These canulae are from four to five millimeters in diameter, permitting a large volume of solution to enter, and sufficient pressure to cleanse the cavity, being one of the numerous advantages over treatment through the natural opening or the use of a small canula. That this method is not applicable to cases where polypi or other tumors exist is self evident, but that a number of cases are cured without the unnecessary destruction of the nasal wall, and leaving a permanent unprotected opening into the antrum is, I think, proven. It is too early to claim that this entrance into the cavity never does harm, certainly it does no good.

My technique is to make the puncture under the inferior turbinate, as close to it as possible, from 1.5 to 2 c. m. posterior to its anterior attachment, then washing the cavity thoroughly with the bulb of a Holmes' or Vail's nasal douche attached to the canula, using as stated above, the normal salt solution. I find the bulb much better than a syringe, as the pressure can be controlled and sufficient force exerted to remove all inspissated pus or other debris equally as thoroughly, and with much less damage to the mucous membrane than can be done with a curette; at the same time the natural opening is cleansed of scabs or dried secretion from this vis a tergo, which if Halle is correct, permits the cavity to be cleansed by suction from the inspired air. These washings are continued daily until the solution is free from pus, then every other day for two or three times, and then after one week, and if there is no pus the patient is dismissed as cured. This must be modified to suit the requirements of each case.

*Case 1:* This patient came to me November 19th, 1905, with a history of having had pus in the right frontal sinus, for which he had been treated for six months through the nose without benefit. Pus flows from right nostril all the time, and reappears in the region of the hiatus semilunaris when wiped away. A probe readily entered the frontal sinus.

The Krause trocar, with canula, was easily introduced through the inferior meatus, the withdrawal of the trocar being followed

by some foul smelling pus. The cavity was thoroughly washed until the salt solution came away clear, again the next day this procedure was repeated, there being a large amount of pus, this was continued every other day for ten days, when, to my surprise, the washings were clear and free from pus. I was informed a few months ago that patient had not had any further trouble and regarded himself as permanently cured.

*Case 2:* Mrs. B., aged 53 years, came to me August 23rd, 1905, with loss of sense of smell and a constant purulent discharge from the right nostril, which patient stated had continued since an attack of septicaemia fifteen years ago. Both middle turbinates were large and pressing against the septum, right nostril being much smaller than the left. I removed the middle turbinates. On November 18th I removed the right inferior turbinate preliminary to doing a radical operation on the maxillary antrum. One month later the patient, who had been a semi-invalid for years, begged me to try some expedient that would relieve her and not tax her strength like an operation under a general anaesthetic. I made an opening in the nasal wall with the Krause trocar and canula, and washed the cavity which was filled with thick pus, thoroughly. This washing was kept up daily for a long time; then every other day, and finally once a week until May, when I discharged the patient as cured. To-day she remains free from the constant dull headache, her general health is much improved and the secretion in her nostrils normal.

*Case 3:* Female, aged 35 years, came complaining with headache and a constant dripping in the throat, and a disagreeable odor that nothing seemed to remove. Found both middle turbinates enlarged and pressing against septum, some pus in left nostril in region of middle turbinate. Removed anterior ends of both middle turbinates January 14th, 1907—on April 12th opened left maxillary antrum with the Krause trocar and canula enlarging opening slightly with Myles' back cutting chisel, finding considerable pus of foul odor,—continued washing cavity until April 25th, when washings were free from pus and patient was dismissed as cured. This patient thinks that this trouble began three years before, with an abscess at root of first molar tooth.

*Case 4:* Mrs. D., aged 50 years, came to me in April of this year with a history of antrum trouble first diagnosed by her dentist several years ago—was complaining of being annoyed by a constant foul odor, worse after stooping. Had just been examined by

her dentist and family physician, who sent her to me for treatment of antrum disease. I found the nostril clean, and practically normal, transillumination showed the face very clear, but left pupil could not be seen. I was much inclined to doubt the correctness of this diagnosis, but decided to make an opening through the inferior meatus, which I did with Myles' chisel, and found foul smelling pus. This cavity was washed daily at first, and then less frequently until the middle of May, when patient was discharged, the washings from cavity being free from pus. Patient returned in August, stating that her dentist claimed there was pus which he had been able to reach through a cavity in the third molar tooth, stating that he was able to introduce a probe through the tooth into the antrum. This, I was unable to do, and as the pupil was perfectly illuminated by the usual method, and she had none of her old symptoms, I sent her back to have the decayed tooth extracted, assuring her that would end her trouble. Patient did this and has had no further trouble.

*Case 5:* This patient has had a purulent rhinitis with headache for many years, the septum has a very large perforation, no illumination of pupil or region of maxillary antrum, has more pain and pus in left nostril. Opening through inferior meatus showed much pus in antrum not fetid, patient lives seventy miles away, and has not been treated with any regularity, but is much improved and free from her distressing symptoms of heaviness and pain. No bacteriological examination was made of discharge.

*Case 6:* This patient has been a chronic sufferer from neuralgia for years, came to the office with an acute exacerbation much worse as are all of her attacks, on the left side. Examination revealed pus in left nostril which flowed freely after cocainizing the middle turbinate and gave relief from pain. Made an opening through the inferior meatus with Myles' chisel, finding pus,—thoroughly washed cavity and patient had a restful night, free from pain. In two weeks patient went to the country having had no pain since first treated, and at the time of departure no pus in the cavity as demonstrated by douching it.

*Case 7:* Male, aged 38 years, does not know when empyema of maxillary antrum developed or the cause. The cavity was opened through the socket of the second bicuspid tooth by my predecessor who gave up practice over ten years ago. At present there is a disagreeable odor of which the patient is conscious all the time, and his associates frequently. There is a fistula at site of old opening

which he keeps patulous with a tooth-pick or anything convenient; after dilating this canal he is able to force fluid from his mouth into the antrum and has been cleansing it in this manner for years. Opening and washing through inferior meatus brought pus in abundance and fetid odor. Since the first washing the odor has subsided, and very little pus, after three weeks' treatment patient was dismissed.

I think that from these few cases, selected for the reason that they were unquestionably chronic, we are justified in trying this simple procedure at least for a few weeks before destroying the naso-antral wall, that we are safe in concluding that the mucous membrane only needs thorough cleansing in a large number of cases to render it free from disease, and that washing it thoroughly can accomplish this as effectually and with much less destruction than the currette.

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**Nasal Headache and Neurasthenia.** ARTHUR HARTMAN. *Deutsche med. Wchnsch.* May 2, 1907.

After a review of the various causes of headaches of nasal origin, the author calls attention to the fact that characteristic frontal sinus pains may be produced by swelling of the mucous membrane of the infundibulum and absorption of air in the sinus, without actual infection of the sinus itself. Such cases get well rapidly upon appropriate nasal treatment.

YANKAUER.

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**Paraffin Protheses.** K. J. WEDERHAKE. *Deutsche med. Wchnsch.* Oct. 3, 1907.

The author believes that in two of his cases slight emboli formed after the injection of solid cold paraffin. He believes that this may be avoided by the use of a special mixture of paraffin and rubber, which is less brittle than the solid paraffin itself.

YANKAUER.



**DILATED VEINLETS UPON THE EXTERNAL NOSE AND  
SEPTUM; THEIR PERMANENT CLOSURE WITH  
THE POSITIVE GALVANIC NEEDLE.\***

BY OTTO T. FREER, M.D., CHICAGO.

The electrolytic destruction of dilated and tortuous veinlets upon the external nose, because of the blemish they create, and of thin-walled little veins upon the anterior part of the septum, because of the repeated nose-bleed they give rise to, has proven a useful procedure to me, and one which has seemed worthy of a more detailed description than my brief mention of it in a previous article in 1906.<sup>1</sup> Some years ago I gave up the attempt to obliterate disfiguring veins in the skin of the external nose because, misled by the method in common use among dermatologists, I used a needle connected to the strongly caustic negative pole. In spite of the more destructive effect of this pole, as compared to the positive one, it failed to permanently close the veinlets needled, because the clot formed in the vessel at the negative or alkaline pole is soft and friable, so that it dissolves away in a few days with a restoration of the circulation in the vessel. In addition, the needle, when connected to the negative pole, with even so slight a current as one or two milliamperes, created little sloughs in the skin that led to the formation of disfiguring dry scabs, which took some weeks to separate, and left red spots for some time.

The firm clot produced at the positive pole of the galvanic current in the electrolytic clotting of aortic aneurysm led me connect the needle to this pole in the treatment of ectatic veinlets upon the nose, and their obliteration has, so far, in the cases seen by me, been lasting, my first patient having been needled three years ago with no reopening of the vessels closed. When the needle is connected to the positive pole, no slough is produced where it enters the skin, as the positive pole is only slightly caustic, and does not destroy the cutis, even when the current strength employed is beyond what is required to close the vessel operated upon, so that five milliamperes may be used without bad effect, unless the electrical action be unduly prolonged. Instead of the deep adherent scabs that follow the use of the needle when it is negative, when positive, it at

\*Read before the Chicago Laryngological and Otological Society, October 8, 1907.

<sup>1</sup> Chairman's address, Section on Laryngology, Boston meeting of the A. M. A., 1906.

the most produces slightly attached minute ones, that drop off in a few days.

The manner of operating is as follows: The current employed is the constant Galvanic one, derived either from a battery, or from a wall plate which reduces the street current. A rheostat and milliamperemeter are necessary accessories. The needle used is exceedingly fine, and is of iridioplatinum, as one of steel would be quickly destroyed by the acids of the positive pole and would stain the skin black. This needle is clamped in a holder made for the purpose and in common use. The needle is connected to the positive cord of the battery or wall plate, while the negative cord is inserted in a large, flat sponge electrode placed in the patient's lap.

Where the patient is unduly sensitive to the sting of the needle when the current is turned on, he is directed to close the circuit gradually by placing his hand gently upon the sponge after the needle is inserted into the vessel. More courageous patients are told to keep the hand permanently upon the sponge, the introduction of the needle closing the circuit under these conditions. This method is more painful than the first, but permits very rapid work.

The current strength used is from two to five milliamperes, according to the fortitude of the individual treated. The weaker the current the longer is the time required to close the lumen of the vessel. The electrolytic action may be increased by pressing the hand more firmly against the sponge or diminished by making its contact lighter, the patient thus controlling the amount of electricity he is willing to endure, the hand acting as a rheostat under his guidance.

The needle point is inserted into the peripheral ends of the branches of the veinlet first, each being punctured at close intervals towards the vessel's trunk until this is reached, when it is also followed up along its whole length to its proximal end. The vessel is seen to blanch as soon as the needle is introduced and the current closed, while bubbles of gas may be observed to travel along its empty lumen. I have never known these gas bubbles to do harm, although they enter the circulation. If the needle be pulled out too soon, blood will flow, but if the current has acted long enough a white, tortuous line will be seen in the place of the veinlet attacked or in larger vessels a blackish, blue streak will mark the clot in it. Where a current of five milliamperes is used, about five seconds for each puncture will suffice to close even a larger veinlet of about knitting needle size, for the smaller vessels from one to two seconds are sufficient. The reason for puncturing the

vein along its course, and for not being satisfied with merely closing its lumen at one point is the need of excluding a reopening of the vessel by collateral channels, and of being certain of the destruction of its tunica intima.

In some cases all of the dilated veins upon the external nose may be closed at the first sitting, the patient's appearance showing an immediate improvement which is very gratifying to him. No sloughs mark the site of the punctures, as where the needle is connected to the negative pole, their location being merely indicated by an exuding drop of serum. No external application is needed after the operation. The coarser the vessels the easier is it to obliterate all of them at the same time, for larger veins remain visible in spite of the blush of the skin produced by the irritation of the treatment. Finer ones soon become hidden by the reddening of the skin, and thus a second or third sitting may be required before all of them have been found and punctured. Diffuse spots of redness, caused by a network of very fine vessels, are especially hard to eradicate.

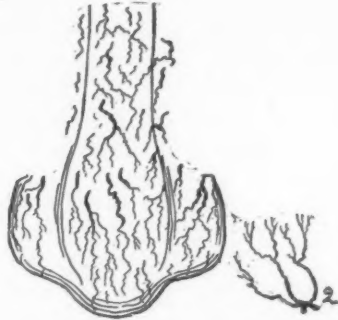
The work is very trying to the eyes, and is best done in daylight and with a pair of strong convex glasses.

I have not had the opportunity to try the effect of the positive needle upon the vascular protuberances of rhinophyma or acne rosacea, my experience being limited to dilated vessels coursing over noses not otherwise disfigured. It seems to me, however, that the multiple punctures of such outgrowths with the needle might lead to their absorption by destroying the venous plexus within them.

In addition to the relief of disfigurement by destroying ectatic vessels upon the external nose I have used positive electrolysis for the eradication of the little veins with friable walls which are situated upon the foremost part of the septum, and which are so readily torn open by the finger nail or handkerchief with resulting nose-bleed. Recurrent attacks of epistaxis produced in this manner may become a serious matter and give the patient a great deal of anxiety. In my experience spontaneous nose-bleed comes oftener from the vessels in this location upon the septum than from the other regions of the nose.

The usual method of destroying these veins is by means of the galvano-cautery. The objection to this procedure is the irritation and scabbing following it, until the destroyed epidermis has been replaced. The positive needle creates no slough in the mucous membrane, no irritation or scabbing follows its use while the vessel may be eradicated completely nevertheless.

I append sketches from life of two cases. One of them shows tortuous veins of the external nose and the other veinlets coursing down the anterior part of the septum to the nasal floor. In both of these cases complete and permanent closure of the vessels was produced.



Numerous dilated veins on external nose, all of which were caused to disappear by positive electrolysis in two sittings.

2. Dilated veinlets at front of bottom of septum. Obliterated by electrolysis.

The treatment, of course, does not prevent a later dilation of other vessels in a normal state at the time of the operation, and the patient should be warned of this. To avoid a reopening of the closed vessels, it is also necessary to be very thorough in the needling, and to use a current of sufficient strength to destroy the vessel wall about the needle.

34 Washington street.

## SUBMUCOUS TURBINECTOMY.

BY H. V. WURDEMAN, M. D., MILWAUKEE.

The writer has not yet seen in the literature a description of the following described intra-nasal operation, which has been done by him several hundred times. Bearing in mind the fact that we have been doing submucous resection of the nasal septum for several years with good results, a like procedure applied to the hypertrophied turbinated bodies seems a reasonable proposition. On account of its simplicity and the probabilities that a similar procedure may have been done by others, although not yet, to the author's knowledge, described, it is submitted with some hesitancy to the profession.

First of all, I want it distinctly understood that I am adverse in nearly every case to a complete excision of the inferior turbinal bodies. I believe such procedure is unwarranted and leads to disastrous results later, in the loss of function necessitated by such a complete removal,—usually resulting in the production of atrophic rhinitis, or atrophic pharyngitis. Therefore, for several years I have not customarily removed any large portion of the turbinal, but have been satisfied with an excision of the hypertrophied lower edge of the bone, together with removal of a small amount of redundant mucous membrane. To this end I adapted the scheme of submucous resection of the septum to the turbinal.

My operations have nearly all been made in the office under local anesthesia, the nose being cleansed several times during the previous twenty-four hours by an alkaline wash with a nasal douche cup or atomizer. The patient is seated at the time of the operation, the mucous membrane being anesthetized by a small quantity of powdered cocain applied along the line of the proposed incision with a pledget of cotton on a probe, which has been previously dipped in adrenalin or suprarenalin 1:1000 solution; this with the powdered cocain makes a very strong solution of cocain,—approximately 50 per cent. The nose is douched with warm alkalin solution about ten minutes after its application, then the operation is begun. If there be any pain during the procedure the cocainization may be repeated.

The instruments necessary are a nasal speculum and a good source of illumination,—reflecting head mirror (or a small incan-

descent light may be inserted in the opposite nostril, (according to the suggestion given me by Dr. Lichtenberg of Kansas City several years ago.) Either procedure lights up the nose well and brings the operative field into view. A scalpel having a short blade and long shank with the handle bent at about 35 degrees is then put into the inferior meatus, its cutting edge being directed towards the turbinal body; an incision is made along the entire length of the turbinal, the cut being carried down to the bone; the upper flap of the mucous membrane is loosened from the bone with a Freer elevator and pushed up until its edge is well into the middle meatus, then the scalpel is inserted under the turbinal and a cut made down to the bone, the extent depending upon the amount of hypertrophied tissue desired to be removed.

The next step is to remove the bony edge, using by preference, a saw curved on the flat; where the bone is thin the scissors suffice,—I prefer the alligator-jawed form; then the section is cleared away and brought out by alligator-jawed forceps, any tags of tissue being cut off by scissors; then the upper flap is brought down by aid of the elevator and applied neatly to the raw surface, usually completely covering the wound. A Bernay's compressed cotton tampon, or more recently, a fold of P. D. Co.'s adrenalin gauze is gently placed between the flap and the septum, care being taken not to disturb the flap. This packing is removed on the next day, and the nose washed out by an alkaline solution, and a like cotton tampon placed in the nostril. On the next day the nose is again washed out and the patient given an antiseptic wash, cotton being worn in the nostril for about two days, and then the patient being allowed to breathe through it.

The case is usually discharged in three or four days. If any granulation tissue or poor healing occurs, I apply or rub down the granulation tissue with a cotton applicator dipped in Tr. Benzoin Comp. Where atresia has occurred between the turbinal body and septum, the surfaces are kept apart until they are healed, by thin plugs of dental wax,—but atresia has only resulted from this form of operation once in the series done by the author according to this method.

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### SOME INTERESTING TONGUE CASES.

BY RICHARD H. JOHNSTON, M. D., BALTIMORE.

The tongue is probably the most neglected organ in the body from a diagnostic standpoint. This is not difficult to understand when we realize that diseases of the tongue are referred to in the most casual way in most medical schools and no attempt is made to differentiate between diseased conditions. Thus, if a patient presents himself with an ulceration, no particular pains are taken to study the character of the lesion but potassium iodide is prescribed and he is instructed to return at some future time when the decision for or against syphilis is made.

Without correct diagnosis, it will be impossible to give the proper treatment, consequently a lesion, perfectly harmless in the beginning may become much more serious later on. The laryngologist through force of circumstances must know something about diseases of the tongue. He will be consulted from time to time by patients who complain only of some disturbance connected with this organ, which certainly comes within his province as a throat specialist. Until a few years ago I had given almost no attention to this important subject. But the ever increasing number of such cases in hospital practice convinced me that diseases of the tongue are of sufficient seriousness and importance to require careful attention. Even in those cases not dangerous to life, the discomfort and sometimes sufferings of the patient demand our earnest consideration. Unfortunately books and literature are scarce on the subject.

It devolves therefore on the laryngologist who, perhaps, sees more tongues than those in other branches of medicine to work out his own methods of diagnosis and treatment. The man who makes a special study of tongues sees very interesting and curious conditions, and in looking up the scanty literature on the subject, he realizes that the opportunities for working out better methods of diagnosis and treatment are just as great as in other branches of medicine. In the examination of a large number of mouths and throats, it has been my good fortune to see some rare diseases of the tongue; I believe they are of sufficient interest to place on record. Some of them have been reported from time to time, but this is the first opportunity I have had to give them out in group form.



CASE I. *Black, hairy tongue. Nigrities. Hyperkeratosis Linguae.* In November, 1901, E. C., 56 years old, in good health, appeared in the throat department of the Presbyterian Hospital. He stated that he had always enjoyed good health and that he had not come to the hospital on account of illness, but because of a peculiar sticking sensation in the mouth and of a blackness of the tongue. The duration of his trouble was two months. Protrusion of the tongue showed a black discoloration, almost round, measuring about an inch in each diameter. The patch was situated in front of the circumvallate papillae in the center of the dorsum. After careful drying with cotton, a more satisfactory view was obtained. The black area was covered with what were apparently hairs from half to three-quarters of an inch long. The mass of hairs could be moved about with the probe. Under the microscope each filament seemed to be made up of epithelial scales, one on top of the other, and brownish granules, to which the color was probably due. I think it has been definitely decided that this trouble is caused by a prolongation of the filiform papillae and the thickening of the epithelium. The cause of the color is a disputed point. Bresin believes that the color is produced by a yeast-like organism. Ciagliniski, Hewelke and Sendsiak succeeded in cultivating a fungus, which they asserted caused the color. Their results have not been confirmed by other investigators. Mourek found on the prolongations of horny epithelium which lengthen the filiform papillae a peculiar coloration due to their horny nature. He could not find fungi. Goodale found the color to be due to highly refractile, yellowish brown granules varying in size up to that of a red blood corpuscle. Black tongue is rare; a few years ago I could find only thirty-three cases in the literature. Symptoms are usually so slight that the discoloration is discovered only by accident. Treatment is not necessary in the majority of cases.

CASE II. *Varicose veins of the tongue.* A female patient, 64 years old, consulted me for throat trouble of many years' standing. She did not complain of her tongue and did not know that it presented anything unusual. When she opened her mouth for the examination of the throat, the peculiar appearance of the tongue was noted at once. On both borders of the organ and extending to within half an inch of the tip were bluish, tortuous, rounded vessels, measuring about four or six millimetres in diameter and covered with mucous membrane. They were soft and compressible and reminded one of varicose veins of the leg except that they were more

distinct. The color was almost as dark as indigo. The vessels terminated abruptly near the tip of the tongue. On the dorsum just internal to the anterior faucial pillars were two isolated vessels entirely separate from each other with the same bluish color. They apparently had no connection with the vessels on the borders. The ranine veins were unusually large and tortuous. At the base the vessels were not especially prominent.

The patient had not noticed the condition and could give no information that threw any light on the abnormality. She had had no hemorrhages. From the isolation of the vessels and the fact that they had caused no trouble, I am inclined to believe that the condition was congenital. The case is of no practical importance, but is certainly a medical curiosity.

CASE III. *Excoriation of the tongue.* In a lady, 35 years old, a simple excoriation on the right border of the tongue had given a great deal of trouble. She said the lesion had arisen seven years ago from irritation caused by a rough, bicuspid tooth. A dentist had smoothed down the tooth, but she had never entirely recovered. When she ate highly seasoned foods, pain was very severe. At times there would be a decided improvement in the condition of the tongue, but she was always conscious that she had such an organ. During the past few months the general discomfort had grown much worse, so that she was never free from suffering. Examination of the tongue showed a half inch space entirely denuded of epithelium. The bicuspid tooth was somewhat rough and was constantly irritating the sore surface. For a month before I saw her, she had been using a stick of nitrate of silver on the excoriation by the direction of a physician, and it had grown steadily worse until she could no longer stand the pain caused by the caustic. The patient was instructed to take a bland, non-irritating diet and was particularly cautioned against highly seasoned foods and alcoholic beverages. The raw surface was painted very gently with a solution of chromic acid, ten grains to the ounce of water and a mild chlorate of potash mouth wash given. Under this treatment she improved steadily; the excoriation decreased in size and pain practically disappeared. When recovery seemed sure, she went to New York and indulged too freely in the pleasures of the table with the result that the old trouble returned. She was again cautioned as to diet and given borax and honey to use at home. A short time ago I heard that as long as she is careful about her diet, she is practically well. The lesson to be learned from this case is that the use of

strong caustics is contra-indicated in nearly all diseases of the tongue. The well-known tendency of diseased areas on the tongue to become cancerous must always be considered in outlining treatment. This tendency is greatly increased by the indiscriminate use of nitrate of silver. If a simple excoriation does not yield to persistent treatment, it had better be carefully watched and removed if the slightest induration appears.

CASE IV. *Erythema Migrans or Wandering Rash.* Typical cases of this affection are rarely seen. This may be due to the fact that subjective symptoms are slight or not present and the disease is observed by accident. In a case seen by me a few weeks ago, the appearance of the tongue was characteristic. On the dorsum were red areas devoid of filiform papillae and surrounded by irregular, wavy, whitish or yellowish-white lines, which bore some resemblance to the lines on a map, so that the name "geographical tongue" could well be given the condition. The red areas were not sensitive and the patient, a boy 8 years old, complained of no symptoms. He was pale and anaemic, which symptoms were caused by hypertrophied tonsils and adenoids. The cause of the condition is not certainly known. It is essentially a disease of childhood, though it is occasionally seen in adults. The old theory that it was due to syphilis has about been discarded. Most children who have the disease are debilitated and scrofulous. Parrot had an opportunity to examine such a tongue microscopically and found the epithelium at the bottom of the patch swollen and thickened; the cells of the horny layer were increased in size; the cells of the Malpighian layer were also increased and proliferated. In the papillae and neighboring parts of the derma around the vessels were a large number of lymphoid cells. He regarded the derma as the essential seat of the disease. It may be considered as a subacute papillitis or inflammation of the derma of the mucous membrane. The disease is in most cases incurable and since symptoms are so slight, no active treatment is required.

CASE V. *Fibroma of the Tongue.* A colored woman, 42 years old, presented an oblong tumor at the tip of the tongue about half an inch from the middle line. The growth was probably half an inch long and caused little annoyance. To the touch it was fairly hard. The color was grayish and few vessels were seen. A probable diagnosis of fibroma was made and removal advised. The patient refused operation so the diagnosis could not be confirmed by the microscope.

CASE VI. *Dermoid Cyst under the Tongue.* The patient was a colored girl, 22 years old, who had noticed some months before, a swelling under the chin which had increased rapidly in size until breathing and talking were somewhat interfered with. The neck appeared very much enlarged and the floor of the mouth bulged upwards so that the tongue did not move normally. To the touch the swelling was soft and imparted a doughy sensation to the finger. A diagnosis of cyst was made and removal advised. The patient would not consent to an external operation so under ether anaesthesia a long incision was made in the floor of the mouth. No hope was entertained of removing the cyst wall through the mouth, but the operation was performed to puncture the growth and draw off its contents as a means of temporary relief. The wall of the cyst soon came into view, and, after exposing it for some distance with a dull dissector, a small puncture was made to ascertain the contents. A thick, pultaceous semi-fluid appeared. The opening was then enlarged and pressure exerted from below. The cyst rapidly emptied itself and the walls collapsed. An effort to separate the walls from the surrounding tissue succeeded and in a few minutes we had the satisfaction of removing the entire cyst wall through the wound. The cavity was packed with iodoform gauze, a few sutures introduced and the patient put to bed. Recovery was uninterrupted and there has been no recurrence of the growth. The cyst corresponded to those congenital cysts which are occasionally found beneath the tongue, remain small for years and suddenly take on rapid growth from some unknown cause. The pultaceous contents of the cyst was sebaceous in character. At the time of removal the growth was probably as large as the fist. The diagnosis of dermoid cyst is made by its location under the tongue, its yellow color when it bulges into the mouth and the pitting on pressure.

CASE VII. *Gummatous Ulcer of the Tongue.* A man 47 years old, for some weeks, had pain on swallowing which had gradually grown worse. When he came to the hospital, he could swallow only the softest food. On the dorsum of the tongue just in front of the circumvallate papillæ was a large, red swelling, evidently the cause of his pain, in the center of which was a mass of necrotic tissue which, on removal revealed a large, deep, crater-like ulcer. The patient gave the history of a chancre twenty years before, but denied having had the usual secondary symptoms. The red color of the swelling was peculiarly livid. The swelling was hard to the touch, and extended several millimetres above the nor-

mal surface of the tongue. The diagnosis of gumma of the tongue is sometimes difficult to make. The ulcers of tuberculosis and cancer may be taken for syphilis and *vice versa*. A swollen mass far back on the dorsum of the tongue is usually gummatous in character. The other diseases occur very rarely in this location. The results of treatment are not so satisfactory in the tertiary as in the secondary stage of the disease. The best results are gotten from tonics and specific treatment.

The patient returned to the hospital a few days later. Over the area covered by the gumma, were three distinct ulcers, two of which had broken down since his first visit, and both had the appearance of the first one. The patient between the first and last visits had been upon active syphilitic treatment. The fact that there was decided progress in the ulcerative process shows how malignant gumma of the tongue sometimes is.

#### ADDENDA.

Since finishing the above article, I have seen another case of hairy tongue. A patient, 43 years old, came to the University Hospital complaining of throat trouble. During the examination a black discoloration was seen about the center of the dorsum of the tongue. On careful inspection the filiform papillæ were found elongated, and not a few of them were dark brown in color. The colored ones varied in length from one-quarter to one-half inch, and could be smoothed out on the tongue with the probe. They resembled hairs, and gave the typical picture of nigrities. The hairy growth was not so pronounced as in Case 1. The patient did not complain of his tongue, and knew nothing of the peculiar formation.

Another peculiar and rare condition of the tongue was seen on November 13, 1907. A male patient, 50 years of age, had been ill since November 10. His illness began with rigors and fever, pains in the head and back. At the same time he experienced slight pain in the tongue, which rapidly increased to such an extent that in twelve hours the organ was so swollen and painful that he had great difficulty in swallowing. When he came to the hospital, he could scarcely open his mouth. On account of his suffering when swallowing, he had eaten practically nothing for two days. Examination of the tongue showed an acute inflammation of the anterior two-thirds of the left half of the organ. The part was red, swollen and tender to the touch. At about the cen-

ter of the swelling there was the sensation of a nodular mass, rather hard to the finger. The slightest movement caused great pain. The tongue could not be protruded from the mouth. The right half of the organ was normal in appearance. An incision into the swelling was made and free bleeding followed. The patient at once experienced some relief. He was given a purge and warm Dobell's solution as a mouth wash. Two days later he returned practically well. Acute parenonymatous hemiglossitis is rarely seen. Statistics from large hospitals show that it is not as common as acute glossitis, in which the whole tongue is more or less involved. Unlike the latter disease, it usually runs a benign course and the patient would recover without treatment. For the relief of pain which is severe, incision followed by free bleeding is the best procedure. The disease occurs oftenest in males, and on the left half of the tongue. The most common cause seems to be exposure to cold. The organisms gain entrance through an abrasion of the mucous membrane from a bad tooth or some slight trauma.

919 North Charles street.

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**Alypin in Otology.** BURKNER. *Berl. klin. Wchnsch.*

The author has found a 5 per cent solution of alypin a useful local anesthetic in operations upon the middle ear. It is less poisonous than cocaine, and its solution can be boiled. Unless combined with adrenalin it does not contract the tissues.

YANKAUER.

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**The Meningococcus and the Micrococcus Catarrhalis in the Naso-Pharynx.** JEHL. *Wiener klin. Wchnsch.*

Both these germs may be found in the mucus of the naso-pharynx, but are seldom found in the anterior parts of the nose. They may be destroyed by the use of Pyocyanose.

YANKAUER.

## ACCESSORY THYROID AT BASE OF TONGUE.\*

BY CHAS. E. PERKINS, M. D., NEW YORK.

The following case came under my care on August 7th, 1907.

A. McG., female, aged 12 years. Had been well until two years previously when she had diphtheria which was followed one and one-half years later by measles complicated with pneumonia.

Present trouble began soon after the diphtheria, the main symptom being a peculiar thickness of speech. One year later her physician removed her adenoids for this condition but without relief.

On examination an enlargement, size of hens egg, could be seen at back of tongue. It was of bluish red color, elastic to the touch, freely movable and with a deep sulcus between it and base of tongue. The epiglottis had been pushed back by it and could not be seen with the mirror, nor could it be felt. The tumor extended completely across the throat from side to side and above to the soft palate. Still deglutition and respiration were well performed.

Operation was performed on the following day with kind assistance of Dr. Frank T. Hopkins. The patient was etherized.

On account of the vascularity of the tissues forming the capsule it seemed best to tear through these. Therefore fixing the tumor by hooking my index finger around it, I plunged a Knight's Nasal Forceps through the capsule, then by separating the blades an L shaped rent was made through which the finger was introduced and the tumor enucleated. Hemorrhage was quite free but not alarming, and the patient made an uneventful recovery.

There is still (Oct. 22) a small enlargement on the left side, about the size of a small hickory nut, but her voice is very much improved. She has gained in flesh and looks much healthier, and in view of the fact that recent operators have intentionally left a piece of the accessory thyroid behind to prevent myxoedema, I propose to watch the case and await developments.

I am indebted to Dr. George Sloane Dixon, Pathologist to the New York Eye and Ear Infirmary, for the following report:

"MY DEAR DR. PERKINS:—

"I beg leave to report that the tumor from the base of the epiglottis submitted some time ago measured 23.5 x 26 mm., that it ap-

\* Read before the Gouverneur Hospital Alumni Society, Nov. 12th, 1907.



parently had a connective tissue capsule. When divided, gross examination of the cut surface showed a thin stroma running through it forming the walls of relatively large spaces filled with a gelatinous, translucent looking material."

"Stained sections showed the stroma to be composed of a thin layer of white and yellow elastic connective tissue fibres, and where the section was exactly at right angle to this layer, wall or septum, there was a single layer of cuboidal epithelium on each side, but when cut obliquely the epithelium appeared to be in several layers, and more uneven in form, naturally."

"The general appearance suggested adeno-cystoma at first, but more careful examination showed a distinct resemblance to thyroid tissue, the large irregular spaces being follicles distended with colloid material generally free from granules and cells."

"All signs of active inflammation were absent, as well as evidence of malignancy, at least at present."

"The capsule was very thin."

"A supernumerary, or accessory thyroid gland was undoubtedly present at the base of the epiglottis when the patient had her attack of diphtheria, and a sufficient amount of irritation resulted to give rise to the condition presented, which is similar to colloid goitre, or struma-gelatinosum."

"I am of the opinion that the remaining nodule is of the same nature and that its decrease in size is due to the better general condition of the patient, the removal of the irritation, whatever it was, and the partial absorption of the colloid material distending its follicles."

(Signed) "GEO. S. DIXON."

These tumors at the base of the tongue are derived from the middle lobe of the thyroid, which is formed by a process or bud from the pharyngeal epithelium in early foetal life. This develops between the sulcus arcuatus which afterwards becomes the epiglottis and the tuberculum impar, which form a part at least of the tongue. As the neck elongates in foetal growth and development, this process sinks below these structures, being connected with the tongue by the thyreo-glossal duct which ends at the foramen caecum. It is easy to see how a mass of thyroid tissue might remain at any location throughout the length of this tract or the tissue originally intended to form the middle lobe of the thyroid might be found "en masse" at the base of the tongue, having failed to descend to its

normal position. In some of these cases the lateral lobes have failed to develop and this so called "Accessory thyroid" appears to have been the only one present as evidenced by myxoedema following its total removal.

I have made a careful search through the literature of this subject and have been able to collect forty-six cases, including my own. Of these, forty were females, five males, and in one case sex not stated; showing a very great preponderance for the female sex. The reason for this has not been explained.

The ages of the patients vary from birth to seventy-seven years, the majority, however, occurring during the second and third decades of life.

In thirty-three cases, operation for removal of the tumor was performed with good results, the patients having been cured or greatly improved. We must note an exception in four of the cases in which myxoedema followed as a result of the operation—cases of Reintjes, Goris, Benjamin and Seldowitch. Case of Chamisso should be excluded as myxoedema was present before operation.

In twenty-one cases, the operation was through the mouth by various means, snare, ligature, enucleation, curette, etc. In several cases, the anterior pillar was incised to allow the tongue to be drawn further out of the mouth. In seven of these twenty-one cases a preliminary tracheotomy is mentioned as having been done.

In twelve cases the route was through the skin between the hyoid bone and the chin with preliminary tracheotomy mentioned as part of the operation in three cases.

In the five cases of death, the tumor was the direct cause of death in one, at least (the case of Hickman), by pressing upon the epiglottis, causing asphyxiation in a new born child. In a second case (Meixner), a child that had never breathed was found, upon examination, to have had a large growth at base of tongue pressing upon the epiglottis. In a third case (case of Aschoff), a child died of myxoedema, at six months, without operation having been performed. In the other two fatal cases tumor was found at autopsy, patient dying of intercurrent affections.

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**REPORT OF A CASE OF TUBERCULOSIS OF THE TONSIL,  
WITH REMARKS ON THE ADMINISTRATION OF  
POTASSIUM IODIDE IN TUBERCULOSIS.\***

BY NORTON L. WILSON, M. D., ELIZABETH, N. J.

Mr. L. H., age 46, a German, height five feet eight inches, weight 140 pounds, was an employee in the Singer Factory as a fitter of shafting. He was referred to me for diagnosis on the fifth day of April, 1906. For the year previous, he had had symptoms of tuberculosis of the lungs; and about three months before he came to me, he had what his doctor thought was an attack of tuberculosis of the bladder. At the time I first saw him, both of these conditions were improved, but he complained of severe pain when swallowing.

He had never had hemorrhages, and at the time of his call his temperature was 98 degrees. He felt chilly at times, and occasionally had sweats. There was no huskiness of voice, but he complained of pain in the throat, especially during deglutition. He had a slight cough, which was more pronounced in the morning.

Examination of the throat revealed the fact that the left tonsil was red and jagged and covered with a whitish yellow film, which, when removed, showed broken down tissue with superficial ulceration involving the crypts in the lower portion, while the upper portion of the tonsil showed well marked yellowish points, surrounding the crypts. An arc of red and yellowish white points, somewhat resembling mycosis, spread over the soft palate. The mucous membrane in the mouth and pharynx was pale as was also the larynx. No involvement of the larynx was detected. The maxillary gland on the left side was slightly enlarged. Examination of the chest showed a small cavity in the upper part of the left lung. The pathologist reported tubercle bacilli in the sputum and in scrapings taken from the tonsil.

My diagnosis was secondary tuberculosis of the tonsil involving the soft palate, and to me it seemed a clear case.

Not long after his consultation with me, he consulted another physician who diagnosed the case as one of syphilis, and in this he was confirmed by another doctor. The patient was put upon twenty grains of Potassium iodide three times a day. Immediately the lungs began to break down, the throat symptoms became rapidly

\*Read before the Eastern Section of the American Laryngological, Rhinological and Otological Society, Boston, January 4, 1908.

worse, and he died in agony early in July. I do not mean to say that this patient would not have died, but I do believe that his comfort was neglected and his death hastened by the course of treatment pursued. This I have observed in several similar cases, and I therefore plead in behalf of the tuberculous patient, that he should be spared the damaging effects of Potassium iodide.

Tuberculosis of the upper air passages is of interest to the members of this society, not alone because we see more of it than the other members of the profession, but because we too are apt to fall into errors in making a clinical diagnosis. More than once have I seen the disease diagnosed as tuberculosis and the patient make a rapid recovery after the liberal use of Potassium iodide. On the other hand I have seen cases of tuberculosis diagnosed as syphilis and Potassium iodide administered with most disastrous results.

Tuberculous patients do not tolerate iodides. It therefore behooves us to use extreme care in making the diagnosis, before we conclude to put them upon Potassium iodide.

It is not often that tuberculosis of the tonsil is mistaken for malignant disease, but not infrequently it is mistaken for syphilis. We can not always rely upon the laboratory diagnosis. All of us have, without doubt, had eminent pathologists give us a report of tuberculosis, when tubercle bacilli were not found, but giant cells were present, and yet the patient recovered upon mixed treatment.

How then shall we know tuberculosis when we see it? First of all we should get as complete a history as possible. If there is given to us a history of syphilis, we naturally conclude that a patient's present condition is syphilitic; but, even under these circumstances, it is not safe for us to exclude tuberculosis for the two diseases may co-exist. If we are told the patient is living with a tuberculous individual, has a cough, fever, sweats and consolidation in the lung, it is safe for us to conclude that the trouble in the upper air passages is of a tubercular nature.

While I believe in primary infection of the upper air passages, I am convinced that many of the so-called primary infections, are secondary in fact, and that a lung lesion, which really exists, has not been discovered. The typical symptoms are, however, frequently wanting, and we often have a hyperplasia of the tissues in the larynx or tonsil which is not always easy to diagnose.

After taking a complete history, it is my habit to look for tubercular lesions elsewhere, and not always to trust to my own judg-

ment in such matters, but to have the lungs examined by an expert, and a tuberculin test given if necessary.

It goes without saying, that the sputum is always examined, and, if an ulcer is present, scrapings should be taken from this broken down tissue and submitted to the pathologist.

The local signs and symptoms should then be studied carefully, and here let me say that while enlarged glands in the neck and at the angle of the jaw are regarded, in some of the text books, as of extreme diagnostic value in syphilis, these enlargements may occur in acute primary tuberculosis or any other acute infection of the tonsil, mouth or nose. Fetor of the breath is also pointed out by some authors as being diagnostic of tuberculosis, but this is largely due to necrosis. The same odor may be found in any broken down tissue. A familiar illustration is to be found in the odor accompanying diphtheria. The character of the ulceration and the location of the hyperplasia are only helpful but not diagnostic.

In my opinion, the most important sign is palor of the mucous membrane and the most important symptoms are cough and pain. The cough may be due either to the pulmonary affection, the condition of the pharynx or the irritability of the larynx. The palor is the result of anaemia, and may be seen in anaemic individuals, but I have observed it more often than any other objective symptom. The pain is often complained of before ulcerations are present and is due to the infiltration of the tissues.

Iodid of Potassium<sup>1</sup> and Sodium are very diffusible and are rapidly excreted; setting free nascent oxygen and iodine at the points of elimination. They are remotely irritant to the mucous membrane. They induce great waste and rapid elimination of waste products, causing anaemia, emaciation and depression. Mercury salts in small doses are blood tonics, improving the general condition, increasing the number of red corpuscles and body weight. They soon, however, begin to promote waste by stimulating the lymphatic system.

A. Baurowicz<sup>2</sup> says, in doubtful cases of syphilis, if the iodide is not efficient, a mercurial treatment should be used in conjunction. The therapeutic test is the most reliable of diagnosis in many cases and should not be omitted before deciding upon the malignant nature of a suspicious growth.

(1) Potter's Materia Medica, Pharmacy and Therapeutics, page 354.

(2) Vol. 3, Practical Med., Series 1905.

I refer to the therapeutic test mentioned above because it is probably the course pursued by many of us, but if this same treatment is followed in a tuberculous case, the patient is sure to suffer from the effects of the experiment.

In cases of mixed infection of tuberculosis and syphilis, there is no definite rule regarding the administration of Potassium iodide.

Knopf<sup>3</sup> says "if the digestive organs are good and the iodide of potassium is well borne and does not produce coryza or increase the pulmonary catarrhal condition, it can safely be given in doses of from five to ten grains three times a day; but of course the patient has to be watched and the iodide must not be given for too long a time. If it is not well borne, interferes with digestion, or produces or increases the symptoms which are above indicated, mercurial friction should be resorted to."

Some syphilitics do better under Potassium iodide, some under Mercury, and some under mixed treatment.

It has been stated that some cases of tuberculosis have improved upon mercurial treatment and I am inclined to believe this is so if given for a short time only. Certainly it does not do the mischief that iodide of potassium produces and I therefore recommend that if we must resort to the therapeutic measures for a diagnosis, we should inject Salicylate of mercury a few times and observe its effects.

Rarely should iodide of potassium be given to a tuberculous patient.

It has been my habit to suspend twelve grains of salicylate of mercury in one ounce of Benzoinol and to inject thirty minims into the buttock once a week.

(3) In a personal letter to the writer.



## CLEFT PALATE. REPORT OF CASE.\*

BY W. W. CARTER, M. D., NEW YORK.

I have the pleasure of reporting this case from Dr. Harmon Smith's clinic at the Manhattan Eye, Ear and Throat Hospital.

The patient is 20 years old and had a cleft involving the soft and and to a slight extent the hard palate. He also had a rhinopharyngitis and considerable hypertrophy of the posterior tips of the inferior turbinates.

He was operated upon October 10th and discharged October 17th. As you see, the reconstruction of the soft palate is complete, even to the uvula.

It is unnecessary to give the details of the operation before this audience, but I should like to call attention to a few important points that I believe are generally applicable in adult cases.

An easy method of freshening the flaps is to grasp the uvula end with a thumb forceps and pare off a strip with a sharp pointed bistoury inserted just anterior to the apex of the cleft.

Right and left angular probe-pointed knives are very useful in separating the tissues from the hamular processes, and in elevating the periosteum from the hard palate. (I use ordinary tonsil knives). When the tissues are thoroughly elevated almost up to the alveolar processes and relaxing incisions made through the flaps internal to the hamular processes, the apron of soft tissue should hang perfectly flaccid and we should be able to approximate the edges without the least tension.

It should be remembered that in the normal palate there is a decussation of the muscular fibres, especially of the palato-pharyngeus and if we are to have a functionally useful organ there must be accurate alignment of the pairs of opposing muscles. (The speaker has seen a failure result from the union of the palatopharyngeus to the palatoglossus). The sutures should be placed close together in order to distribute the tension. I prefer medium size iron-dyed silk, as it is less likely to cut through and not so irritating to the tongue as either silkworm gut or wire.

No after dressing is applied. The nose and throat are irrigated frequently with a physiological salt solution and the patient is fed for six days through a stomach tube introduced through the nose.

\*Read before the Section on Laryngology and Rhinology of the New York Academy of Medicine, November 27, 1907.

Our aim in doing the operation is to improve the nasal respiratory passages, favor mastication, insalivation and deglutition and improve the pronunciation.

To get perfect speech after the palate operation:

*First.*—We must supply tissue that is capable of contracting and shutting off the nasal passages at the proper time under the stimulation from the motor center in the brain.

*Second.*—The ear must be trained to readily distinguish incorrect sounds in the pronunciation of words. The patient does not recognize his own defects in pronunciation while speaking, but does so when his speech is reproduced from a graphophone. This instrument therefore is useful in treating these cases.

*Third.*—In every case of cleft palate that has reached the age when the habit of speech has been acquired, there is developed a neuromuscular perversion. This results from the effort to use in lieu of a palate, the epiglottis, aryepiglottic folds and the ventricular bands in the pronunciation of words.

When an operation was first suggested to this patient, he said that I could not improve his pronunciation, that it was an hereditary defect, that his younger brother who had a palate talked as he did. I suspected that it was a case of acquired defect in pronunciation, and thought that if this proved to be the case, as it did, it would be of interest to show the two cases side by side.

The parents of these boys died when they were quite young, and they have always been closely associated and mutually dependent upon each other. In one the defect in pronunciation is due to his having no palate; and in the other who has a palate it is due to being taught by his brother to speak without using this oral instrument. The situation is certainly a very remarkable and instructive one.

Of the twenty-three consonant sounds, only two, namely M and N, can be correctly pronounced by a cleft palate patient.

"Say:—H-Q-S-U-X-YES, SIR, CHRIS."

You can see that the pronunciation by both parties is exactly the same.

In both of these men, there is developed a neuro-muscular perversion and defect in pronunciation that can be cured only by persistent mental training.

Since the palate in the one has been constructed by operation, the status of these two men as regards prognosis and treatment is practically the same.

69 West Fiftieth Street.

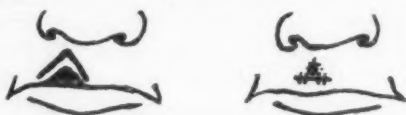
## A CASE OF HARE-LIP OPERATION BY A NEW METHOD.\*

BY W. W. CARTER, A. M., M. D., NEW YORK.

Many of you will recognize this patient as having been presented at the last meeting in conjunction with a cleft palate case to demonstrate an acquired perversion in pronunciation.

The situation is so unique that I feel you will pardon me if I again make a passing reference to it. The parents of this boy, who is 18 years old, died when he was quite young and he was taught to speak by his brother who is two years older, and who has a congenital cleft palate. He learned to speak, therefore, without using his palate, and his pronunciation is the same as that of one having a cleft. His palate is perfectly normal but he does not know how to use it.

This patient had a congenital hare-lip that was operated upon when he was 12 months old, the result was not particularly good. A broad, moderately deep cleft remained, and the vermillion border was raised on either side of the cleft and the whole lip was filled with scar tissue. The cleft was so broad that to have pared the



edges and united them would have left the lip too narrow and the vermillion border would have been irregular. There being ample tissue above the cleft I decided to do the following operation:

November 3 an incision was made through the labio-alveolar fold of mucous membrane and the tissues of the lip elevated from their attachments. An inverted V-shaped incision was then made through the thickness of the lip, an arm reaching down on either side of the cleft, but only to the upper limit of the vermillion border, the apex of the incision being above that of the cleft. The included pyramidal piece of tissue was then pushed downward by bringing together the arms of the V. This was done by tension sutures of heavy silk introduced through the entire thickness of the lip some distance from the wound. Approximation sutures of horse hair were used in bringing the edges of the wound together on both the cutaneous and mucous surfaces. The scar tissue from the previous operation was a hindrance during this procedure.

\* Read before the Section on Laryngology and Rhinology of the New York Academy of Medicine, December 18, 1907.

A gauze dressing was applied and adhesive plaster stretched over it in such a manner as to pull either cheek forward. The dressing and stitches were removed on the seventh day. Primary union was obtained and the final result is what you see.

I neglected to have a photograph of the case taken before the operation, but I assure you that the improvement is marked, and I am sure that those of you who remember seeing the patient at the last meeting will agree with me.

I would recommend the operation for broad, shallow clefts, and especially where the vermilion border is raised.

69 West Fiftieth Street.

**A Severe Case of Tuberculosis of the Tonsils, the Pillars, Uvula Pharynx, and the Naso-Pharyngeal Cavity, Quickly and Permanently Cured by Methylene Blue.** T. BOBONE, de SAN REMO. *Rev. Heb. de Laryng. D'Otol. et de Rhinol.*, Oct. 6, 1906.

The patient was a woman of 54 years, much emaciated, who had suffered for a considerable time with severe pain in the deglutition. On examination there was found an immense ulceration occupying the whole of the posterior and lateral walls of the pharynx, the two tonsils, the pillars, part of the uvula and the edges of the velum palati. This ulceration was of an irregular form and was covered with a thick, yellowish-gray exudate, the removal of which left a bleeding surface. By means of a posterior rhinoscopy, the ulceration could be seen extending to the basilar apophysis and occupying the whole surface of the rhino-pharynx. The exudate caused difficulty in respiration. The nostrils were free of the disease; the larynx, with the exception of the pale color, was normal. There was a consolidation in the apex of the right lung.

The treatment consisted of free curetting of the tonsils, pillars and pharynx, drying with tampons of cotton, followed by an application of mercury cyanide 1-5000, and afterwards with a solution of 50 per cent. lactic acid; when the bleeding had been arrested a solution of methylene blue, 2-1000, was applied to the whole surface.

The microscopic examination of the debris of the mucosa removed by the curette showed the presence of the tubercle bacilli. The treatment was followed by rapid improvement. The application of lactic acid and methylene blue were continued. A week after the treatment was begun healing commenced and deglutition was easier. Two months later healing was complete.

SCHEPPEGRELL.

## SOCIETY PROCEEDINGS.

### NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

*Regular Meeting, Feb. 26, 1908.*

WOLFF FREUDENTHAL, M. D. Chairman.

#### PRESENTATION OF PATIENTS.

**A Case of Osteochondroma of the Septum with Extensive Absorption of the Cribriform Plate, Tumor Extending into the Cranial Cavity, Sphenoidal and Ethmoidal Cells.** By ROBT. MYLES, M. D.

#### DISCUSSION.

DR. JOHN A. BODINE said that he had not arrived in time to hear Dr. Myles' paper, but that he was very familiar with the case presented, and its surgical aspect particularly interested him. The first thing considered in the surgical management of this case was access to the growth, as it filled up the entire nasal pharynx, pushing outward one lachrymal bone, and in its upward growth had destroyed the cribriform plate of the ethmoid and pushed upward the frontal lobes of the brain. One can readily see that such methods as resection of one upper jaw or even dividing the face in the middle line, reflecting outwards both upward jaws, would have left us without adequate access to the upper limits of the growth. It seemed best, then, to cut the cartilaginous ends of the nose away from its attachment at the apertura piriformis, to chisel through the nasal bone along its articulation with the nasal process of the superior maxilla on one side, then to chisel through the line of articulation between the nasal bones and frontal, and by fracture of the opposite nasal bone, to lay the entire bony structure of the nose over the opposite eye. This gave us access to the upper limit of the growth. The second consideration was a safe and sane method of controlling hemorrhage. If one studies through the list of surgery, general as well as special, one finds the control of hemorrhage in this part of the body by ligation of special arteries in the neck. This is true of the lingual artery, the facial artery, and others. Now, as a matter of fact it takes considerably longer to isolate, identify and ligate these special arteries than it does to throw a ligature around

the external carotid, and this is the best means of controlling hemorrhage during these bloody operations of the nasal pharynx that we have to-day. Some fifteen or twenty years ago some forty per cent of deaths were recorded from ligating the external carotid. To-day the aseptic ligature around the external carotid may be done in ten minutes with local anaesthesia and wholly without mortality. In this case of Dr. Myles, however, to control the hemorrhage, it was necessary to control the circulation in both external carotids, and while ligation of one external carotid is wholly without danger, the simultaneous ligation of both is a "horse of a different color." Upon the side of the face to which the fractured nose was reflected it was necessary to leave intact the external carotid so as to supply blood to the pedicle and secure healing after replacing the nose, and upon this side a temporary loop of catgut was thrown around the carotid and pulled taut whenever the hemorrhage demanded control. Such expedients as preliminary tracheotomy to prevent inspiration of blood into the lungs are, in my opinion, wholly unsurgical. The third important consideration was the choice of an anaesthetic. Dr. Bodine said that he believed it was safe to say that we are to-day on the eve of a revolution in regard to anaesthesia, and the man of to-day who uses ether or chloroform in all major operations, will, in a short time, find himself entirely in the wrong. This patient had chloroform during the last part of the operation, as the growth was being removed from the cranial cavity. He had been given two tablets of hyoscine prior to the operation, while during the operation 1:500 solution of cocaine was used locally. The operation extended over two hours' of time. He went on the table with a pulse of eighty and came off with a pulse of ninety. At all times he was able to spit out the blood that ran into the nasal pharynx.

DR. L. A. COFFIN said that he would be glad to know whether in Dr. Myles' case the growth extended into the naso-pharynx, and what was the degree of malignancy.

He had a case of similar nature which he would report to the section.

**A Case of Excision of a Tubercular Infiltration of the Epiglottis and a Brief History of Two Similar Cases.** By J. W. GLEITSMAN, M. D.

The patient presented was not the one which Dr. Gleitsman originally intended to demonstrate, as that one has been laid up with tubercular epidymitis for the last two weeks.

The patient presented was referred to Dr. Gleitsmann two years ago by Dr. Semken, and was operated upon at that time. He has been living in Baltimore for the last eighteen months, and has only recently returned to New York, and upon request reported himself at the office this morning. His epiglottis is fully cicatrized, and shows to better advantage than the case recently operated upon.

He was seen the first time February 9, 1906. He had then bronchovesticular breathing at the left apex posteriorly, no expectoration, but he suffered from a dry cough, slight hoarseness and occasional dysphagia. The larynx showed a considerable infiltration of the margin and an ulcer of the epiglottis, and slight involvement of the left aritenoid fold. At the first operation the diseased portion of the epiglottis was excised. Four days later the dysphagia had disappeared and the patient began to gain in weight. About a month later a small remnant of infiltrated tissue and the upper part of the ary-epiglottic fold was removed. A week later the patient was discharged, and was not seen again until to-day. He says that during the last few weeks he has felt a slight discomfort, which is due to an infiltration of the left ventricular band.

The patient, who is laid up is thirty-two years of age, and was first seen January 14, 1908. For two weeks previously he had been unable to swallow food to any extent. The entire edge of the epiglottis presented a hard, tense, and extensive infiltration, which was excised *in toto* at one operation, at the German Hospital. A week later he was discharged without dysphagia, and returned to his work.

The third patient was a married woman of thirty-eight, whose complete history is given in the Transactions of the American Laryngological Association, 1898, page 210. The epiglottis was one large ulcer which was excised, but many complications, especially tubercular ulceration of the tongue, had to be treated. Ultimately, after a year of treatment, the patient recovered completely and went to Europe, where, according to reports received a few years ago, she enjoyed perfect health.

**A Case of Laryngeal Leprosy.** By HOWARD FOX, M. D.

The patient is twenty-three years of age, although he looks twice that age. He was born in Trinidad, and came to this country when twelve years old. He lived in New Haven, Conn., for three years, then made Brooklyn his headquarters. Shortly after coming to Brooklyn the skin lesions appeared. The throat symptoms first appeared three or four years ago, when he began to be hoarse and



noticed sores in his mouth and throat. Within the past month a large ulceration of the palate has almost entirely disappeared. He has been under treatment of Chaulmoogra oil, which has apparently benefitted him. He has at times suffered from severe dyspnoea, which has been relieved by a cocaine spray.

Examinations shows well-marked macular lesions over the trunk and extremities, and the typical facies of tubercular leprosy. There is an atrophic rhinitis and perforation of the septum, deep ulceration of hard palate and pharynx, and extensive scarring of palate and fauces. The epiglottis is represented on one side by a swollen irregular mass, preventing examination of the cords and causing the dyspnoea.

#### DISCUSSION.

DR. RICE said that way back in '79 and '80 he had seen four or five cases of leprosy at the Charity Hospital, but had seen none since. He had not had opportunity to examine this case, but in those that he had seen the larynx, epiglottis and arytenoids were very nodular in appearance and there was considerable enlargement. In one of them, the stenosis was so great that a tracheotomy was necessary. A variety of treatments were tried, but none of them amounted to anything. One or two of the patients died from general causes, and the others were lost track of. Dr. Rice said that the cases were all very interesting and he had published an account of them at the time. He would have liked to have seen if the pathology of this case was the same as of those which he had seen years ago.

DR. JOHNSON said that he had examined this case, and it was nothing like those on the Island to which Dr. Rice referred. In this case there were very extensive ulcerative processes, as well as nodulation, involving not only the epiglottis but extending down to the cricoid cartilage and including the entire space between the folds, also ulceration of the tonsils and destructive processes all the way through the membranes of the nose and throat. There was also a perforation of the septum. According to his recollection only one of the cases on the Island showed any involvement of the larynx. They were show cases for quite a long time, the laryngeal case died as a result of exhaustion and laryngeal obstruction; the other cases were still there when he left the Island, and he has no knowledge of the question of laryngeal involvement or the final result.

DR. EMIL MAYER said that he had seen a case of leprosy in a young girl which involved the larynx, in addition to the external nose, lips and cheeks, as well as portions of the body. In the pres-

ent case there were several points of much interest, viz.: The very large perforation in the nasal septum and the tumors in the posterior wall, and the tumefaction which prevents a view of the interior of the larynx. It would seem that ere long a tracheotomy was going to be required in order to relieve the dyspnoea. One of the interesting features of the case was the length of time the patient had lived in this country before developing the leprosy—fourteen years, before any sign appeared. Another question that arises is in regard to the contagiousness of the disease.

**Case of Laryngismus Stridulus.** By JAMES HARRIS, M. D.

Patient, man, 48 years old, eldest of fourteen children, twelve of whom are alive. Family history good.

Previous history: Has never been ill except for the laryngeal symptoms. No specific history, no sign of Tabes. Heart, lungs and kidneys normal. Nearly every night for the past thirty-five years he has been awakened with a choking sensation. The attacks were generally only momentary, causing him to rise to a sitting position, when they would pass off and he would fall back to sleep. After being fatigued these attacks were more sure to occur; also lying on the back seems to aggravate them.

The patient, a business man, has worked without a day of vacation for the past eight years, and for the past five months has been under great mental strain. He had the first typical attack of laryngismus stridulus about a year ago which lasted for about five minutes. He did not lose consciousness, but had to get down on his hands and knees in order to get his breath. Five weeks ago he had the first attack of the present series. At that time and for about three weeks he suffered also from a very bad laryngeal cough. The attacks vary from a hard coughing spell to croup, and then to the typical laryngeal stridulus lasting five minutes, during which time the patient runs about the room in an endeavor to inspire. The attacks invariably occur at night. Four weeks ago, Sunday, he had almost a tonic spasm of the larynx for twelve hours, but of much slighter degree. He has seldom had more than one severe spasm in a night, but may have several slight ones. He had no severe spasm from the fourteenth to the twenty-first day of this illness. There was a slight congestion of the cords and larynx at first but this has now disappeared. The cords were covered with a very sticky mucus which, when expectorated, checked the coughing spells. There are no other local symptoms. The case has been seen in consultation by Dr.

Felix Cohn and Dr. Charles Dana, among others. Dr. Dana failed to discover any nerve lesions.

The remedial agents have consisted in morphine, hypodermically at the height of the attacks, about three weeks ago—veronal, codein, heroin, acidum hydroc. dil., ammon. brom., potass. brom., sodium brom., syr. hypophos. comp., sodium iod. and iodized calcium. Locally, comp. tinct. benzoin inhalations were tried, but had to be discontinued on account of the nausea they produced. Adrenalin chlorid sol. 1-5000 was used in the form of a spray, but could not be borne at all. Chloroform is used to prevent the culmination of a spasm but cannot be used during the attack. Amyl nitrate has not given good results. Cold packs for the larynx were tried without good results, as was also hot antiphlogistin. For the past five nights a vapor cressoline lamp has been used with apparent good results. The patient has not had a spasm for the past two days, but last night was threatened with one which was only prevented by the use of chloroform.

#### DISCUSSION.

DR. FELIX COHN said that he had seen the patient a few weeks ago in consultation with Dr. Harris and a neurologist. An absolute diagnosis was impossible. In the larynx, anatomically, the only change appeared in a somewhat elongated and pendant epiglottis. Examination of the cords revealed a slight tendency to adduction. On deep inspiration the chords did not move freely or as far as under normal conditions, and the impression from inspection was that there appeared pressure symptoms upon the recurrent nerve, such as are frequently found in an early stage of complete paralysis. A slight dullness over the sternum seemed to corroborate this view. As the affection dates from childhood and as a history of lues is absolutely excluded it may be assumed as likely that an enlarged gland might be exerting some pressure on the nerve; on the other hand, a spasm upon a purely functional or hysterical basis cannot be excluded. In regard to the prognosis, as far as danger to life is concerned, a study of the literature of this affection shows that it is somewhat favorable—death rarely resulting on account of the affection. Should, however, the recurring attacks exhaust the patient, a tracheotomy might be performed.

#### **Pemphigus of the Soft Palate.** By L. M. HURD, M. D.

This patient, a woman, has been in the Manhattan Eye and Ear Hospital for two weeks, coming in for the condition of her eye. Soon after her arrival, she was sent to the throat department and we

found a condition involving the soft palate and laryngeal walls. Two days later the picture changed, and Dr. Harmon Smith made the suggestion of pemphigus. Two days later two characteristic blebs appeared on the soft palate. The attacks lasted two weeks—sometimes very slight, sometimes severe. The lesions have never appeared on any part of the body. Dr. Hurd said that there were only a few similar cases on record. He was inclined to believe that this patient has also had pemphigus of the stomach, as she has had several attacks of neuralgia of the stomach.

## DISCUSSION.

DR. HARMON SMITH said that there seemed to be an understanding between Dr. Hurd and himself as regards reciprocal favors in diagnosis, for three years ago he had presented a case of pemphigus of the throat to this section, in which instance he had been treating the patient for specific conditions, believing the patches seen upon the soft palate to be mucous patches, but upon one occasion the same patient was treated for some ear trouble by Dr. Hurd, and he recognized at this time typical pemphigus blebs upon the palate and immediately called attention of the throat department to the condition.

This woman later suffered intense gastro-intestinal pain, finally becoming so weak that she was unable to attend the clinic. It is very probable she died of gastro-intestinal involvement, which is the ultimate outcome of these cases.

Unless the case is seen at the time of the eruption the clinical aspect is very similar to syphilis, and only the pain evidences the existence of pemphigus.

**A Consideration of the "Herd" Theory as an Etiological Factor of Ozaena.** By CLEMENT F. THEISEN, M. D., Albany.

**The Pathology of Atrophic Rhinitis, With Ozaena.** By D. BRADEN KYLE, M. D., Philadelphia.

**The Treatment of Atrophic Rhinitis, Including Ozaena.** By G. L. RICHARDS, M.D., Fall River.

By R. C. MYLES, M.D., New York.

Dr. Rice was asked to open the discussion, and read a short paper embodying his views on the subject.

*The papers of this Symposium will be published in full in a subsequent issue of THE LARYNGOSCOPE.*

## DISCUSSION.

DR. DELAVAN remarked that he had very little to add to what had already been well said.

With regard to the frequency of the condition, he agreed with Dr. Rice. He had seen fewer cases relatively in late years than in the earlier days of his practice, and he thought Dr. Rice was right in attributing this decrease to improved nasal hygiene and better understanding of the conditions.

With regard to the pathology of the disease, there is little new knowledge and it was desirable that more should be known about this branch of the subject. He had listened to Dr. Kyle's statements on the subject with great pleasure. He had himself believed for a long time that these cases did not all represent one and the same disease, but that there were several varieties to be found and that they demanded recognition, and that it was necessary to recognize this in discussing the methods of treatment. Not all forms of treatment were adapted alike to a given form of the disease.

One type of the disease not mentioned to-night was the condition of atrophic catarrh that is often seen behind the nose and in the vault of the pharynx, sometimes due to adenoid hypertrophy, and sometimes arising where there has been no appearance of adenoid hypertrophy. These cases are serious on account of the tendency which they show to travel down the Eustachian tubes and affect the ears, causing a type of deafness very difficult to deal with.

With regard to treatment—anything of an astringent nature is contra-indicated, which idea, together with other valuable contributions to the subject, was taught by Dr. Bosworth years ago. In the speaker's own opinion the most effective form of treatment consists in thorough, persistent, long-continued, and effective irrigation and effective cleansing by such means as might be selected, followed by some form of stimulation, and in some cases, by the application of oily sprays. The use of medicaments, cotton plugs, and electricity in various forms all seem to depend for their results on stimulation of the mucous membrane. In cases where the disease was not too chronic he obtained the most satisfactory results by stimulation, combined with irrigation, and even in the most chronic cases much could be done through the patient application of proper means. He had used the constant current by various methods of application and had had a number of successful cases, but none of these belong to the old, inveterate, and apparently hopeless class.

DR. JESSE E. NEWCOMB said that he had been greatly interested in the papers of the evening and had nothing to add concerning the pathology or treatment of the condition. The latter embraced two main features—cleanliness and stimulation. It was not difficult to relieve the main discomforts of the affection to both the patient

and his environment, but in many instances the so-called cures necessitated a continuance of home treatment for an indefinite period, perhaps for life. There was no sovereign remedy—fidelity in the application of any one would do all that was possible, though the alteration of remedies was not without its utility. He did not think it was quite right to speak of restoration of the internal contour of the nares by paraffin injections as a cure of ozaena, although they did to a certain extent restore mechanical conditions. They could not restore atrophied secreting tissue.

Of late the point of special interest in his own mind had been the possible relation between the nasal condition under consideration and tuberculosis. During the last few years he had examined several hundred applicants for admission to one of the Adirondack sanatoria, and while no systematic records had been kept of intra-nasal findings he had the very definite impression that atrophic conditions were no more common in this number of patients than would be the case in an equal number of unselected cases under any circumstances. The patients referred to were mainly tenement dwellers, living under a poor environment. Since January 1st of the present year he had recorded the exact intra-nasal findings, and in twenty-one cases thus far examined hypertrophic rhinitis had been found in one, slight atrophy in three, moderate atrophy in two, ozaena in one, and the remaining fourteen were practically normal.

Perhaps the most exact and important contribution to this subject was the paper of Dr. Arthur Alexander, of Berlin, in vol. xv. of Fraenkel's Archiv. Dr. Thiesen had also presented an interesting paper on the matter at the Atlantic City meeting of the American Laryngological Association, in 1904. Alexander gave a table of autopsy records on ozaena patients, and found in a large number that in three-fourths of them the cause of death was pulmonary tuberculosis. Furthermore, in fifty ozaena cases of living patients, tuberculosis was found in nearly half. Finally, in one hundred cases of tuberculosis, ozaena was found in three and one-half per cent, and simple atrophic catarrh in one and one-half per cent. The figures of other authors did not materially differ.

This matter of the relation between the two affections was confessedly a very obscure one, and it was not surprising that a multiplicity of theories existed. Perhaps the most recent contribution to the topic was that of Caboche, whose main thesis was that ozaena is a latent form of tuberculosis. While perhaps his reasoning was not conclusive, he had brought forward some interesting facts. Experimentally, he inoculated ten guinea pigs with pieces of tissue

from the inferior turbinate of an ozaenatous patient, the inoculation being made in the vagina in five cases and in the peritoneal cavity in five others. All these results were negative. He calls attention to the difficulty in making positive inoculations with tissue as distinctively tubercular as is lupus tissue, and thinks that this same refractory quality inheres to ozaenous tissue.

Of more interest than these experiments, however, were the views of Caboche with reference to the histories of those families in which both tuberculosis and ozaena had been relatively common. He found that tuberculous parents gave birth with notable frequency to ozaenous children, and that on the other hand an ozaenous mother might and did by a sort of phenomenon of reversibility, as he terms it, give birth to tuberculous children. And this did not seem to be a mere coincidence, for he found that the death rate from tuberculous diseases in the children of this class of mothers was unusually large.

Finally, he called attention to the advisability of watching ozaena with reference to the matter of possible contagion in the disease. Much that was fanciful had been written on this special phase of the subject, but the facts which had been collected by Perez and Lermoyez could not be overlooked. The former's theory that the disease was propagated by dogs' nasal mucous was not as yet to be taken seriously. Lermoyez's account of a series of cases which he described as if they were syphilis, and then stated that he had been playing on the credulity of his hearers and that they were in fact cases of ozaena, might not be the most exact method of propagating scientific truth, but the facts were there and it was difficult to deny them. The deduction was that in every case, as soon as discovered, ozaena should be vigorously treated and brought to that stage in which the results secured by the physician could be maintained by the patient's own home treatment.

DR. HURD called attention to same points which although brought out as predisposing causes seemed to him to be hereditary. Several children affected in one family seemed to indicate not so much contagion as heredity. There certainly are different classes of this affection and Dr. Kyle had summed the matter up very thoroughly. In cases with a large nares on one side filled with crusts, sometimes with a bad odor and sometimes not—a good result is often obtained by equalizing the two cavities and putting the septum in the median line. The submucous operation does not give as wide a septum as might be desired in such cases. Lately he had seen a case which had continued for three years without odor. Citric acid seems



to be one of the most satisfying remedies for the bad odor cases, in connection with cleansing of the nares. Routine treatment is very effective. One of his assistants has paid a great deal of attention to such cases, simply cleaning out the crusts and applying ichthyol three times a week, and teaching the patients to do it for themselves, and has obtained some very satisfactory results.

DR. W. W. CARTER said that we were not in a position to accept the "Herd" theory unreservedly as to sinusitis being always the cause of atrophic rhinitis, although a great many cases of atrophy of the nasal mucous membrane are caused by sinusitis. These cases, however, can be put in a class by themselves, and are not identical with the specific disease recognized as ozaena. Certainly some such classification must be made if we are to accept ozaena as a pathological entity. He has a case under his care at present that is very instructive, and although one can draw no conclusions from one case, certainly this one throws considerable light on the situation. The patient has a sinusitis with marked atrophy of the mucous membrane on one side, while the other side is apparently normal. There is not the characteristic odor of atrophic rhinitis in this case.

In regard to the odor, Dr. Carter said that there is certainly something else to account for the peculiar fetor other than the decomposition of the secretion in the nose as stated by most writers. He has cleansed the nasal cavities thoroughly, and yet he still observed the characteristic odor of ozaena. He said that in addition to the atrophic changes going on in the mucous membrane, there is also a gradual disintegration and disappearance of the bony tissue, and it seemed to him that the odor of the disease is somewhat similar to that of necrotic bone. Dr. Carter thought, therefore, that the peculiar odor might be due to the products of the molecular disintegration of bone constantly going on in these cases, and he wished to offer this as a probable cause of an, as yet, unexplained phenomenon.

DR. THEISEN in closing the discussion, said that he wished to emphasize the importance of infectious diseases in early life as a factor in the causation of this disease—scarlet fever, diphtheria or measles. These diseases in many instances produce an infection of the accessory sinuses, where it lingers, sometimes for years, and affords a good preparation for the development of ozaena. His assistant is always instructed to investigate the history of such cases. He appreciated the fact that Dr. Myles was in accord with this theory. All know that the purulent rhinitis of children is probably

due to infection of one or more of the accessory sinuses. While it is sometimes a purulent infection pure and simple in the majority of the cases, it is the result of infectious disease. This is the most important point in connection with the Herd theory.

DR. KYLE, replying to Dr. Myles' remarks, said that this point bears out the claim he makes that there is not any one first stage. There are so many causes that it is almost impossible to get at any one first stage. It may be that there is an inherited weakened tissue, and the nose is easily infected and tends to catarrhal conditions, or there may be a tendency to tuberculosis, or inherited syphilis. What gives rhinitis in children, if it is all due to one germ? Does one child get it from another?

If you treat and study the process known as atrophy of the mucous membrane, with or without ozaena, you will find that it is not a specific disease in many cases. He had seen many instances where, as soon as the atrophic process was relieved the ozaena disappeared. In some cases where the process was stayed, the patient had a fairly good mucous membrane.

If one studies the cases from the clinical end only, and tries to make out the inherited condition, lowered powers of resistance, etc., he will probably find some underlying cause, but he did not believe that pathological studies would show any one cause, and that is why it is difficult to get at the first stage of the disease.

For many years he made a study of the chemical conditions, and in many of the cases where the patient has auto-infection there was an excess of sulphocyanides, but in other cases this did not appear; but where there was a degenerative change in the tissue—where it was in the tissues and gland structures—every one showed chemical change.

DR. RICHARDS said that he had nothing to add to what he had already said on the subject of treatment. It only remains to study the etiology and make it contribute so far as possible in the selection of the remedy, and to keep the nose clean. The patients are mostly relieved and occasionally they are cured.

#### PRESENTATION OF INSTRUMENTS.

DR. BRYSON D. DELAVAN presented a number of instruments devised by the late James H. Goodwilie—saws, drills, cautery tools, etc., some of which were exceedingly ingenious and effective, and a few of which are still in use. He hoped that this set of instruments would help in handing down to posterity the name of one of the most useful men of this city.

**CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.**

*Regular Meeting, February 11, 1908.*

A. H. ANDREWS, M. D., PRESIDENT.

**Anatomy of the Frontal Sinus.** By J. G. WILSON, M. D.

**Opening the Frontal Sinus.** By R. H. GOOD, M. D. (Published in full in this number of THE LARYNGOSCOPE, page 266.)

DISCUSSION.

DR. JOS. C. BECK: I had an accident during an intra-nasal operation done according to Halle's method. The result was a local meningitis. Halle's, Ingals' and Good's methods seem to offer practically the same chance for danger. I find that the greatest difficulty with these operations is the getting into the frontal sinus. Dr. Good says that the whole sinus may be drained by his method, and the others make the same claim. I have a radiograph of one case which shows that it is impossible because the sinus was bisected by a bony septum. I cannot see how any of these methods would drain that sinus. Of course, an intranasal operation is preferable to the external operations, and it seems to me that Dr. Good's method is a valuable one, especially the use of the rasp. I will give the method a trial for that reason.

Dr. Wilson's means for measuring the cribriform plate of the ethmoid will be of very great value to us. I have been trying to do the same thing by means of skiagraphs, but the method is more difficult and not as accurate as Dr. Wilson's.

DR. A. M. CORWIN: The demonstration of Dr. Good's method was very nice indeed, but fill in these cavities with mucous membrane, and pass into it an instrument of the size of this rasp, and at this angle, and I fear that it will inflict considerable damage all along the tract. We should be sure to injure all the structures and cause the formation of adhesions, militating against the possibility of perfect drainage. To pass this rasp well up into the frontal sinus it seems as though we should have to go into the mouth and through the palate, judging from the skull which is being used as a model.

DR. GEO. E. SHAMBAUGH: For the relief of most of these frontal sinus cases intranasal work is all that is required. Even in the majority of the chronic cases the radical external operation is

to be done only when we do not get satisfactory relief from the severe symptoms by an intranasal operation.

I am especially pleased with the elaborate details Dr. Good worked out, but there is one point that must not be lost sight of, and that is confusing the idea of a radical operation with that of best results.

The most radical operation will often not give as satisfactory result as the more conservative procedure. This is especially true in the frontal sinus cases, when the choice is to be made between an external operation and an intranasal one. And in the intranasal operation for the drainage of the frontal sinus the most radical tearing up of these parts does not necessarily assure results better or even as good in the majority of cases as more careful, conservative procedure.

My work usually consists of using forceps to remove the turbinate body and to get out the anterior ethmoid cells, and I usually get satisfactory drainage in that way. One can take out the entire ethmoid labyrinth with these forceps. The one instrument shown by Dr. Good that appeals to me the most is the rasp to be used to enlarge the frontal sinus opening. But the question arises whether it is necessary to use this rasp if the opening present is sufficiently large to admit the rasp. It is only when the opening is obstructed that symptoms are likely to be annoying, so that if you can pass in the rasp there is usually no obstruction, hence no symptoms. I should be inclined to try it, however, where the usual intranasal operation did not give results.

In regard to the operation for removing the floor of the frontal sinus with chisels. This can no doubt be successfully accomplished in cases where the posterior wall of the frontal sinus is separated by a considerable distance from the anterior wall. But there are other cases where a study of the relations in a cadaver shows that such an operation is practically impossible without breaking through the cribriform plate. I will pass around an anatomical preparation where this is the situation. Here the cribriform plate extends fully one-half inch anterior to the opening of the naso-frontal duct. In this case even if it were possible to work with the protectors which have been shown this evening, which I hardly think could be used in such a case, I do not see how a chiseling operation can be done without great probability of injury to the cribriform plate. The narrow chamber in which this work must be done prevents the placing of a chisel at

such an angle as to obviate in any way, it seems to me, this danger. In this specimen, for example, the opening of the naso-frontal duct is scarcely one-fourth of an inch from the cribriform plate. I can hardly conceive the possibility of using a chisel even on the cadaver where the view is not obscured by swollen and bleeding tissues without the probability of fracturing the cribriform plate.

As to the danger of exposing the dura in such operations, we have learned from our work upon the mastoid that the mere exposure of the dura, provided this is not injured, is not fraught with any degree of danger. In the case of the frontal sinus, for example, the exposed dura on the posterior wall of the frontal sinus need not necessarily increase to any great extent the danger of the operation. An injury to the cribriform plate, however, is quite a different matter. This plate is perforated by numerous nerve filaments and lymphatics, which brings the dura into close relation with the intranasal cavity. A mere fracture of the cribriform without so much as a perforating wound, must result in considerable laceration of these prolongations, and open the way to a most ready infection in this part.

As far as I have been able to judge of the several intranasal methods of enlarging the opening of the frontal sinus into the nose, it seems to me that the method which has been devised by Dr. Ingals, that of passing a burr over a pilot, presents by far the safest method that has yet been suggested.

DR. J. HOLINGER: The intranasal treatment for chronic suppuration of the frontal sinus will never entirely take the place of Killian's external operation, although the latter is indicated in only a few cases. The opening and drainage of the different sinuses is not the only indication for our therapeutical endeavors. The mucous membrane is usually affected in such a manner as to continue to make trouble, even though drainage is perfect, as the following case will demonstrate. A surgeon of this city opened up all the sinuses in a case which took him three months to accomplish, but he never thought of washing them out. The patient was not at all relieved. I washed out the sinuses with boric acid solution, and every symptom disappeared at once. The sinuses were filled with decomposed pus and mucus, and a very few washings were sufficient to ease the most distressing symptoms.

Another point: The bones in the upper part of the nose in these old chronic cases are not normal, but are extremely brittle. Any instrument in the duct may easily injure the bony septa. One

may even break through any cavity, and into the skull, with an irrigation tube or a probe without using any force at all. Therefore, one must be very careful in these cases. It has happened twice to me to have a patient collapse during the washing of the sinus. In one case I saw at a subsequent operation that the inner plate was necrotic, and that the fluid had probably forced its way into the extradural space.

As to the experiments of opening the sinus from the nose, it must be said that the skulls which have been shown here are normal, and the arrangement of the sinuses is normal. The most stubborn cases, however, are those where the arrangement of the sinuses is abnormal. In order to illustrate this point allow me to remind you of the young woman I showed here a year ago. She had to be operated upon her *left* frontal sinus. The *right* sinus extended over both sides, and the left one was only a small slit containing ill smelling pus in the depth of the orbit, where no intranasal treatment could reach it. All of these cavities are lined with mucous membrane, which is at the same time periosteum. You rasp this away and lay bare the bone. What happens? Granulations will form which will produce pus and necrosis, thus causing the very condition you wish to overcome. I am very careful in using the curette in any of these cavities. It is a different matter to break away some parts with a forceps than to enter a bleeding cavity with a curette or rasp. I should hesitate to do so. It is very easy to injure or scrape away this thin mucous membrane, but what are you going to put in place of it?

DR. J. G. WILSON: So far as Dr. Good's operation is concerned, I believe that the best way to go into the frontal sinus is by the intranasal route, but there always will be a few cases where one cannot get into the sinus in that way. One thing is certain, that before a man does Dr. Good's operation, he should ascertain the position of the nasal duct, and its relation to the cribriform plate. If Dr. Good, in the majority of his operations simply removes the ethmoidal cells to secure drainage, I am positive that he would get the desired effect.

In regard to the question of exposing the dura, I do not think that that does any harm whatever; but perforating it is a different matter, because the lymphatics of the dura lie not external to it, but in the arachnoid space, and this is continued down over the olfactory nerves as they pass into the nasal cavity. If one exposes

the dura, very little damage may be expected, but if he perforates the dura, I should say that the danger would be great.

Dr. R. H. Good: Dr. Corwin doubts whether the rasp enters the frontal sinus. By looking at this recent preparation with the front wall of the sinus removed he can readily convince himself that it enters into the sinus.

Dr. Ballenger is right when he says that the rasp looks rather crude to him; but better ones are being made.

As to the dura, I do not think it dangerous to expose it, but if it is perforated, meningitis will nearly always follow, providing you do not make a large opening and insert a gauze drain.

I saw a case of cholesteatoma of the frontal sinus in Vienna, which had a perforation of the posterior bony wall of the frontal sinus as large as a dime. After removing the cholesteatoma, the doctor perforated the dura with a small knife for diagnostic purposes, and the patient died in five days from Meningitis. I believe in keeping away from the inner plate of the frontal sinus, which is easily done by my method.

In reply to Dr. Shambaugh, I would say that my operation is only done in cases where the ordinary methods have failed.

The cribriform plate is not in danger, as the chisel is directed externally to this structure, and passing at a tangent to the orbital wall. The structures which may be damaged are the lamina papyracea and the lachrymal bone, and these can be protected by the assistant.

Dr. Hollinger favors Killian's operation, and I know that all four of my cases would have been operated by Killian had they been his patients. Furthermore, all the operations I saw in Europe on the frontal sinus, except one, had been operated on once or twice before.

#### PRESENTATION OF INSTRUMENTS.

Dr. L. Ostrom exhibited an Antrum Forceps.

Dr. F. E. Brawley exhibited an Irrigation Apparatus for the Nasal Accessory Sinuses.



## THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

*Twenty-ninth Annual Congress. Washington, D.C., May 7 to 9, 1907.*

A. W. DEROLDES, M. D., President.

*(Continued from the March number, page 240.)*

**A Case of Spasm of the Esophagus.** By JOHN W. FARLOW, M. D., Boston.

*(Published in full in THE LARYNGOSCOPE, p. 639, August, 1907.)*

### DISCUSSION.

DR. H. L. SWAIN: I have never seen a case of spasm of the esophagus just like this. Before hearing the paper, I was interested to learn what sort of case Dr. Farlow was to relate to us. On Thursday last, a patient came in during my office hour and said that he had been unable to swallow for eighteen hours. Not a bit of moisture could possibly be gotten down his throat. His throat was not sore. During the last three years he had occasional attacks of the same kind, lasting about ten or fifteen minutes. Two weeks before he had had one lasting an hour, during which time he had fainted; and some doctor whose name he does not know had been called in, and had passed an esophageal bougie. This had relieved his spasm.

This patient gave a distinct point of issue of the spasms. It was situated upon the left side of the throat. There would be a painful sensation, and resulting from that was something like a cramp in the throat. From then until the throat relaxed, he would be unable to swallow anything. At his visit to me he made an attempt to swallow water, but regurgitated it with intense spasms. All the muscles drew up, as in stiff neck. Being now interested in esophagoscopy and bronchoscopy, I looked down into the esophagus with great pleasure. Mindful of the fact that he had said that there was something on the left side, I cocaineized the left sinus sigmoidius. I passed the esophagoscope and the probe down farther and farther, until I struck a point that he said was the place, just below the level of the cricoid. Then the spasm let up; and as I took my instrument out to let the cocaine work, he said: "I can swallow." I handed him a glass of water and he swallowed it with composure.

I then tried an esophageal lesion; and, passing the esophagoscope down again, I discovered a round swelling on the left hand side, just below the cricoid cartilage—about 25 cm. down from the teeth, as marked on the tubes. That ball was somewhat eroded. The patient was not a good subject for examination; and, not being very skillful, I did not get a good view. I put on a simple five per cent. nitrate of silver solution, and expected to see him again before coming away, but evidently he was able to swallow from then on, as he has not shown up.

Inquiry as to his habits, in order to get a more definite idea of the pathological conditions, developed nothing. He was an inordinate drinker of indifferent whiskey; otherwise, there was no glandular swelling or enlargement of any kind.

He said that constantly during the last year he had had such difficulty with his throat. During the time the spasm is on, absolutely nothing can pass down. He apparently has the same sensation in his esophagus as he would have if the cramp were in any other muscle. I hope some time later, perhaps, to extend this report; but the case was very interesting to me in connection with Dr. Farlow's paper.

DR. W. E. CASSELBERRY: I regret that Dr. Farlow did not make a trial of cocaine, even though the esophagus was in such a spasmodic state that there was no hope for it to pass through the constricted point. I recall, in this connection, not a spasm of the esophagus, but a case of dysphagia spastica (which has been recorded), in which a gentleman with such a spastic condition, attempting to speak, would be unable to do so, and in which a cocaine spray applied to the nose enabled him to speak in half an hour or an hour. There is something in the absorption of the cocaine; for in its application to surrounding surfaces, enough passes through to near the place of spasm to influence a spasmodic condition of the muscles in these parts. The cocaine might have had no effect in Dr. Farlow's case, but it would seem to be worth a trial and would be harmless. The solution should be applied to the constricted esophagus as near as possible to the point of spasm.

Again, I recall a case in which there was such a spasmodic state; but nothing like the one described in intensity, and not enduring so long. It was in an elderly gentleman. In an elderly person, with symptoms of dysphagia, one instantly thinks of a possible carcinoma of the esophagus; but this man had given a history extending over six years of his life, without any aggravation of the con-

dition. So, although I could not exclude carcinoma, I did not think he had it. The condition was not always present. Sometimes he would not have it for two or three months, and then it would be present for two or three weeks at a time. At such times, on attempting to swallow special articles of food—acids, for instance—he would have a constriction of the esophagus, which he located at the upper part. He would be unable to proceed with his meal, but would choke and have to rise from the table.

Investigation in his case was pursued in the following manner: First, attempts at passing esophageal bougies of various sorts were made; and I was utterly unable to pass one. Every time the attempt was made the esophagus, in the region of the cricoid, or below, would constrict. He was then anesthetized. I told him that this was necessary for a positive diagnosis. Ether was given to the point of surgical anesthesia, and bougies were passed. Somewhat to my surprise, bougies of any caliber were found to slip down with the utmost ease. There was no point of constriction. I used Einhorn's esophagoscope without any trouble whatever. I got a good view and could see nothing abnormal in any way. The man is still alive. This was about eighteen months ago. He is neither worse nor better, and suffers still in the same way.

DR. L. A. COFFIN: These cases would seem to be of disordered reflexes, and I presume that we have all had spasms of the esophagus with certain stimuli or with irritation at the proper point. There seems to be some change at the point of the peripheral sensory nerves.

This recalls an interesting case that occurred a number of years ago. A boy twelve years of age had never been able to swallow anything solid; and his family could not take him to ordinary hotel-tables, etc., as they felt ashamed to have him sit down in public and eat only Mellin's Food and milk. I was asked to see him. I could not form an opinion as to the cause of the constriction, but I did know that the child had adenoids. I thought he would be better off with them out, whether their removal had any influence on his deglutition or not. They were removed, and the next day he could swallow all right. He has had no trouble since, and I believed it to have been due to this disorder of the nerve ends. I should think that cocaine would be just the thing to relieve this condition—temporarily, at least.

DR. E. FLETCHER INGALS: I now have under observation, and have had for some weeks, a case similar to that reported by Dr. Farlow.

It is that of a lady about forty years of age, not hysterical, and presenting nothing wrong in her appearance, except that she looks anemic. She has had the spasm of the esophagus, much like that of this patient, for a number of months; and while she has been under my care there has been a gradual improvement under the use of tonics and bromides. In much the same way, I have used these remedies before for spasms of the esophagus and pharynx. I did not get any very satisfactory results until I began introducing esophageal bougies, employing pretty large ones. Each time this gave decided relief, and I found her better at her next visit. I think that this method of treatment will effect a cure in her case. At one of the treatments I used cocaine before passing the bougie, to relieve the patient's discomfort. I had previously passed the bougies without the cocaine; and the patient said she preferred it without cocaine, as she did not like its after effects. There would, I think, be no difficulty in passing an esophageal swab with cocaine on it, to relieve the patient's discomfort at the time; although, inasmuch as the spasms are usually relieved after a few minutes, I do not think that there is much use in doing so. They get over it about as quickly as they would get over the bad results of the drug.

PROF. GUSTAV KILLIAN: I have had some experience in spasms of the esophagus, having seen a great many cases. In order to reach a correct diagnosis it is necessary to exclude changes in other organs. If the patient has a stenosis of the esophagus, or a carcinoma, this must be excluded. If nothing else can be found to account for the condition, we may then consider it to be a spasm of the esophagus.

Spasms of the esophagus cannot be cured until we learn their origin. There are two kinds of spasm of the esophagus, primary and secondary. I have seen cases in which the origin of the spasm was a disease of the stomach. That organ is frequently diseased; and then we have to cure the disease of the stomach, if we wish to have success in our treatment. In other cases—which, I think, are the most common—we find that the patient eats too rapidly—that he does not masticate sufficiently, and swallows his food too quickly. I have found patients that have taken their dinner or supper in ten minutes. Among such persons, it is clear that there will be some cases, of spasm of the esophagus or of gastric disease.

It is very interesting to be able to demonstrate to the patient that eating too rapidly is the cause of his trouble. I do this by means of

a little instrument that I have invented. It consists of five plates, one above another, in each of which are holes. The size of these openings gradually diminishes from the top to the bottom, those in the latter plate being quite small. I give the patient a piece of bread to masticate. When this is ready to be swallowed, I have him spit it out; and I wash out the mouth with water. He takes out the instrument; and he can then see that most of the bread is under the first plate, and not—as it would be in normal cases—at the fourth or fifth. The particles swallowed have been too large to pass through any but the upper holes.

DR. A. W. DE ROALDES: I would call to the attention of the society the fact that some of these cases of spasm of the esophagus may be secondary to some disease of the nervous system, especially *tabes*. This fact should not be overlooked. In the *tabetic* condition of certain patients that have come under my observation I have noticed the frequency of spasms in some cases. These occur not only in the advanced stage of the disease, in which spasms, sometimes of a clonic character, like ordinary cramps, are frequently noticed, but also in the early stages. I remember a case in which the patient had suffered for nearly two years with spasm of this kind, but clonic in character. This was not diagnosed in the beginning as to its origin, but was simply treated and unrelieved. Two years afterwards the case was reported in Europe as having developed *tabes*. The spasm continued for many years, and finally the patient died a *tabetic*.

I should, therefore, like to call your attention to these spasms; because they may constitute a prodromal condition of a case of *tabes*.

DR. G. HUDSON MAKUEN: Gentlemen, I am inclined to think that many of these cases like those described by the reader of the paper are analogous to the condition referred to by Dr. Casselberry as *dysphonia spastica*; and that there is a nervous, or psychical, element in them. The patients cannot swallow, because they think they cannot, or fear they cannot; and they always do better—whether in swallowing, in vocalization, or in the use of speech—when under some form of mental exhilaration. This may explain why Dr. Coffin's patient did better during the dinner he gave him. These *dysphonia spastica* cases will always do better during periods of exhilaration. I think, perhaps, that this will explain the effect of cocaine largely. I believe that it is more the systemic effect of the cocaine that produces the good effect in such cases than its local effect. The patients are in a state of mental excitement.

The normal man will talk more and better under the effects of cocaine.

I also wonder whether this condition may not be similar to the condition one sometimes finds in slight paresis of the pharyngeal muscles. I now have under my care a little fellow who has great difficulty in swallowing, due to unilateral paresis of the pharyngeal muscles. If the paralysis were bilateral, it would be rather difficult to diagnosticate it; but, being unilateral, it pulls the palate to one side, and I can see the true condition. The trouble comes on only occasionally. At such times he has to throw his head to one side and twist his neck, in order to get the bolus down. The patient improves under electrical treatment of the pharyngeal muscles.

DR. FARLOW, closing: The discussion has been very interesting, but it has not given me any suggestion as to how such a case should be treated in the absence of the physician. The hints that possibly exhilaration might be an aid would hardly apply in my cases, because in several instances the spasm came on during the progress of a luncheon to which a number of persons had been invited, so that the patient was in considerable exhilaration. It could not, also, have been caused by insufficient mastication, or by swallowing large pieces of food too quickly. In the uncle and the father of the patient, who each suffered in the same way, the attacks came on with the first mouthful, which was often only soup without any vegetables in it and containing no irritable substance in the form of salt. Therefore, my cases are not of that character.

As regards cocaine, we should not use it when a spasm is first coming on; because it is possible that the spasm may be but momentary. If, however, it has been persisting for fifteen or twenty minutes, the mouth will be full of saliva; and I do not think that in these circumstances the cocaine would act. The patient is in great distress during these spasms; and I should be loath to pass anything with an irritating substance of any kind on it, or an instrument of any size, down the esophagus of a person gasping for breath. It is a very distressing case; so that forms of treatment that can be used in the dispensary for patients with chronic and frequently recurring spasms are not applicable to a case in which the patient is in perfect health between the spasms. I have seen her recently. She was then about to go away, and wanted to know whether there was not something that she could take with her to relieve the spasm; and I am sorry to say that I have been unable to give her any suggestion.

DR. MAKUEN: Would the distress take place if the bolus she attempts to swallow were in a fluid condition?

DR. FARLOW: There is nothing more fluid than clear soup.

DR. MAKUEN: I do not understand the physiology of the phenomenon. I should think that the soup would be regurgitated.

DR. FARLOW, closing (concluded): I referred to the uncle and the father as having had a series of attacks through many years. An aunt has similar attacks, as does also a sister. There seems to be some family peculiarity about it.

**Some Considerations Relative to the Lymphoid Tissue of the Fauces in the Systemic Infections.** By J. L. GOODALE, M.D.

Many infections enter the system through the pharyngeal follicles in the absence of tonsillar involvement, or after the tonsils have been extirpated. A case of infectious arthritis was reported in which temporary improvements in the joints followed the removal of the tonsils, but which later showed a recurrence of the arthritis repeatedly is associated with acute follicular pharyngitis. It is probable that the infection in such cases is through the central invagination of the individual follicles of the pharynx. The site of the follicular crypt may be indicated in acute inflammation by a small white spot, which is composed of leucocytes and at times fibrin. A consideration of such cases emphasizes the important part played by the host, since it has been demonstrated that an infection may take place through normal lymphoid tissue. A. A.

DISCUSSION.

DR. W. E. CASSELBERRY: I am very glad, indeed, that Dr. Goodale has drawn attention to the lymphoid tissue in what I had been accustomed to term the angles of mechanics. Of course, isolated follicles also exist all over the posterior wall; but behind the posterior pillars of the fauces there is a chain of lymphoid follicles grouped closely together, and capable of acute tonsillitis or acute infection. They are also frequently found chronically hypertrophied, and are then still more susceptible to acute infection. This is an old focal condition of the lymphoid tissue of the pharynx, so far as the enlargement of the follicular tissue in the angle is concerned; and it is called pharyngitis lateralis, or implication of the lateral portion of the pharynx. It is, however, the lymphoid tissue that is the vulnerable point of infection, undergoing inflammatory reaction, and causing the systemic condition.



I have also been conscious for a long time that this chain of glands is, in part, responsible for the systemic infections under the name of acute rheumatism, acute endocarditis, etc.; because I have repeatedly observed it in children and adults upon whom I had made a thorough tonsillectomy. There would subsequently be, in these cases, attacks of lighter degree; and I would find the lymphoid tissue in the angles in an acute state of inflammation, and it was evident that the whole of the absorbing surface had not been removed. In such cases, I have always destroyed these glands by the use of the cautery. It is a flat surface, not well adapted to excision, but adapted to cauterization. By making a loop of wire, one can reach behind the pillar, above the velum, and down into the pharynx; and one can there destroy the chain of glands; which is of eminent benefit from the standpoint of acute inflammations and to the pharynx as a whole, when chronically hypertrophied.

DR. R. C. MYLES: This is a subject that I am particularly interested in, and I feel very much indebted to Dr. Goodale for the light that he has given me. I do not know why we have written and talked and thought so much about the tonsils and the systemic infection occurring through them, and have been so slow to systematize our evidence. This refers not only to the specialist, but also to the general practitioner and the pediatricist, especially in regard to different varieties of tonsillar affection. For instance, we may have a cervical gland deep behind the tonsils. I do not believe the average children's specialist keeps a record of the septic glands found in children's throats. If a septic gland were found in any other part of the body a record would be made of it and it would be removed. The tonsil noticed by the specialist is the tonsil that sticks away out into the throat, but other kinds may be just as dangerous. The crypts go down deep; and there the chief sepsis occurs, on account of the moderate amount of epithelium. By properly examining the cervical glands, one should be able to tell the pathology of the tonsils without looking at the throat. I always examine these glands before examining the throat. The pathology of the throat has in each instance, confirmed the diagnosis made by the size of the cervical glands. The tonsillar affection, if very definite, will make the tonsils hard. It depends upon the length of time the condition has existed, how hard they will be found to be. In proportion to their softness, the infection is likely to disappear; in proportion to their hardness, the prognosis is bad. Twenty per cent of tonsillar infections are of this variety,

while eighty per cent are of the palatal tonsil. The latter tonsil is practically incapable of extirpation, and its extirpation should not be attempted without serious provocation. When I hear of extirpation of this tonsil, which is particularly liable to adenitis, I feel skeptical. Others claim to remove it, but I have never been able to do so. It extends three-quarters of an inch into the palate. When I attempted to remove the capsule, I got cervical sepsis, and even edema under the zygomatic arch. In the other cases, the capsule removed itself; but the latter kind, which include eighty per cent of the cases, are practically inoperable, without serious danger of causing cellulitis of the neck of different forms. When the palatal tonsil extends to this depth it is better to clean it out and involute it. When we remove that variety, we go further and take the salpingeal folds, which also create a certain amount of adenitis cervicis. The adenoid region causes adenitis in the post cervical region. There are little dots, feeling like small buckshot.

As I have stated in the beginning, it is the rule to have this evidence of sepsis without looking at the tonsil; and if it were in any other part of the body, the surgeon or physician would notice it. Being, however, so common, it is practically ignored. I have noticed these glands go down in proportion to the betterment in the condition of the throat following operations; and I have noticed, in many cases, the after pathology of these glands in regard to the growth or disappearance of the pathological phenomena. It certainly is a very interesting subject. I think that in our reports we should give the amount of adenitis cervicis in proportion to the amount of tonsilitis; and I would urge upon the physician to take cognizance of the amount of sepsis in the cervical glands.

DR. C. L. RICHARDS: With reference to adenitis cervicis, do you find tuberculosis to be usually the cause?

DR. MYLES: In a series of cases on which general surgeons in New York City have operated for cervical glands. I have insisted that at the same operation I should dissect out all the lymphoid tissue in the throat. Every one of these patients is to-day in splendid health.

DR. RICHARDS: In other words, the glands were universally tubercular?

DR. MYLES: It was very difficult to tell, because we extirpated them so thoroughly. Men like Adler and other good pathologists are coming over to the idea that these cases are instances of direct

infection through the lymphoid ring of the throat. One should involute these basic tonsils in the throat, especially, and cut them out; and when this is finished, there is a hole, but the capsule is left in. They develop like a tumor in the palate.

DR. PACKARD: I had a case that seems instructive in this respect. The patient, a child previously healthy, had a sore throat last September. He had had no serious illness except whooping-cough. Following the attack of sore-throat, a large, hard, cervical gland developed on the right side. The child was brought to see me last January. He had a pair of big tonsils, which I took out. They were very adherent and very difficult to remove. Their removal had no effect on the swollen gland on the right side. In March, Dr. R. G. LeConte removed the gland by external operation and examined it microscopically. He found it tubercular. There was no other evidence of tuberculosis in the child. The tuberculin reaction has recently been tried, but I have not yet heard the result.

DR. RICHARDS: I have had some experience with this rheumatic condition. A woman with almost no tonsil has, two or three times a year, a severe systemic infection in the throat, complaining severely of pain along the adenoid region—or where the adenoid region would be, if she had any. There are probably some remnants of the glands and along the thickened pillars, showing the transference of the poison through the lymphatic ring. This patient has been operated on by the general surgeon for all sorts of complaints. A good many of these cases, which, perhaps, are handled by the general practitioner, have more of the source in the throat than we have yet appreciated; because some do not present much evidence in the throat in the intervals between the attacks, even on careful examination, by drawing the anterior and posterior pillars forward and lifting up the arch of the palate. Yet when the attack comes on, they have a severe systemic infection with its local point in the throat; and the only cure seems to be to remove in the interval every portion of tymphoid tissue that can be found.

With reference to the cervical gland, I do not know whether Dr. Myles understood my question. I wanted to know whether the enlarged lymphatic glands in children are not almost entirely tubercular. I have operated upon such glands, and have had them examined pathologically afterward. Sometimes tubercle bacilli are found, and sometimes not. In an association like this, composed of men that regard themselves laryngological surgeons, why should

we advocate turning such cases over to the general surgeon? If we have to work in the nose and throat and remove the tonsils, we ought to be able to remove our own cervical glands. We are the only persons that can induce the family of the patient to have such a gland removed. I have been endeavoring to get my patients to let me clean out the cervical chain, as well as enucleate the tonsil.

DR. FRANCKE H. BOSWORTH: Mr. President:—In the first place, the importance of recognizing the fact that the lymphoid tissue of the pharynx is a source of infection cannot be overestimated. The pharynx is not a part of the air-passages, but of the food-passages; and it is not involved in acute "colds." An inflammation of the pharynx should be recognized as an infective disease.

When you come to the question of the mischievous action of the tonsil, I would say that when we remove a tonsil, we are taking out a large mass that the Lord did not put there, but the mother. Potin describes it as lymphatism that involves the lymphatic ring, and the lymphatics of the neck and other portions of the body. It is our duty to remove diseased lymphatics. The majority of children that come to throat specialists have enlarged lymphatics. These do not constitute a clinical condition that demands interference. If we remove the mechanical condition in the pharynx, destroying the focus that entangles the germs, we have done all we are called upon to do. Germs do not lodge there usually. It is only by the mechanical entrapping of bacteria that they burrow into the tissues and produce these infective diseases. It seems to me that our duty is not to dig out all the lymphatic tissue, but merely to remove the pockets, which are the source of the mischief. If we can get rid of them, there will probably be no further trouble. The Lord put lymphatics there for some good purpose, and that purpose should not be thwarted. This is assuming that the invaginated tonsil is not a condition that exists in the economy. Invagination is a diseased condition; but unless there are pockets, the condition is not one of disease.

The so-called palatal tonsil described by anatomists, I do not believe to be an organ of the normal body. It is only when there is invagination that it becomes a trap to catch the germs of disease.

In regard to removing all lymphatics, it does not seem to me that it is a clinical indication; for it is the mechanical indications that we have to remove. A large tonsil that projects into the throat—

a large, round mass, without any follicles—does no harm. We should not remove the lymphatics, but the mechanical conditions.

DR. COBB: I want to thank Dr. Bosworth for his remarks. It also seems to me very unlikely that we should have a tonsillar ring without any object. It is absurd to believe that we should have a mechanism for the sole purpose of absorbing bacteria in our throats. Therefore, the pathological retention by pockets or anything that tends to obstruct the flow from the tonsils will do more to cause trouble than will the tonsil or the lymphoid tissue. Is it not possible that the lymphoid tissue is a protector, and the glands in other localities are also for the purpose of protecting against micro-organism? They hold pathological material in the glands for some time, attempting to destroy it. Sometimes they succeed; but sometimes they are overcome, and the germs get into the general circulation. It seems to me that it is a mistake to think that one should obliterate apparently normal tissue, simply on the evidence that through it pathological organisms occasionally reach the circulation. It appears quite possible and more than likely that these get in, not on account of the presence of the ring, but in spite of it. If we were to inject one one-hundredth part of the bacteria present in acute tonsilitis into the circulation, the result would be septic fever. There is very little sepsis in acute tonsilitis. There is some for a day or two, and then it is relieved. Does not this mean that the tonsil has been able to take care of an enormous number of bacteria and fight against them, instead of serving as a sieve to admit them? If this enormous number of germs had reached the circulation, should we not have had a great deal more sepsis?

DR. MAYER: I am very glad to see this subject brought up; as I recall that, within the year, Jacobi has published an article taking an entirely different standpoint from that which we have all accepted—that there is a direct infection beginning with the lymphatics of the throat. The standpoint of the speakers at that time was so different from what I had believed that I am glad to have an opportunity to hear the matter discussed. If Dr. Fitz has any observations of his own to present, we should be happy to know what his views are regarding infections at this particular point.

DR. R. H. FITZ: The general practitioner, so far as the relation of the tonsil to the infection is concerned, is usually more interested in acute articular rheumatism than in any other disease. It seems that, whatever the tonsil may do in some infections, it does not do the same in all. The particular appearance of one organism,

in which it differs from another, may allow of its passing through the tonsil. The remarks we have just heard were to the effect that in the tonsil we have a sufficient guard from certain abnormal infections. I do not know whether the result of extirpation of the tonsil has been determined with regard to its bearing upon cases of multiple arthritis. It seems a very interesting point for those with large experience to study. The infections that occurs after the removal of the tonsils should be investigated in relation to those occurring before the tonsils have been removed.

DR. MYLES: Dr. Richards asked me a question regarding tubercular glands of the neck. I did not wish to say that I advocate the removal of lymphatics when they are protective, but only when they are suppurating. In regard to having such operations done by the general surgeon, I would state that these patients were not brought to the general surgeon by me, but were brought to me by the general surgeon.

DR. BOSWORTH: Twenty-seven years ago, in London, I made the assertion that from the practical point of view, there are no tonsils in a healthy throat. I venture the prediction that this statement will soon be accepted by all practitioners. I have been practicing forty years, and have come to the conclusion that the tonsil is placed there as a trap for disease. It is not the lymphatic body that invites the micro-organisms to enter the body; it entraps them and prevents systemic infection. There is no tonsil in the healthy throat; the tonsil described by anatomists is a disease-process. In studying its function, therefore, we are trying to determine the physiological function of a pathological lesion.

*Discussion of Dr. Goodale's paper to be concluded.*

*Proceedings of the American Laryngological Association to be continued.*

## BOOK REVIEWS.

### **The Practitioner's Medical Dictionary. An Illustrated Dictionary of Medicine and Allied Subjects, Including all the Words and Phrases Generally used in Medicine, with Their Proper Pronunciation, Derivation, and Definition.**

By GEORGE M. GOULD, A. M., M. D., author of "An Illustrated Dictionary of Medicine, Biology, and Allied Sciences," "The Student's Medical Dictionary," "30,000 Medical Words Pronounced and Defined," "Biographic Clinics," "The Meaning and Method of Life," "Borderland Studies," etc.; Editor of "American Medicine." With 388 Illustrations. Octavo; xvi + 1043 pages. Flexible Leather, Gilt Edges, Rounded Corners, \$5.00; with Thumb Index, \$6.00 net. P. Blakiston's Son & Co., Publishers, 1012 Walnut St., Philadelphia.

A reliable dictionary is as essential to every worker in medical literature as a good scalpel is to the surgeon. No one knows more of dictionary construction than Dr. Gould, for with his vast experiences both in literature and in dictionary making he is in a supreme position to know not only the necessities, but the luxuries of the practitioner and also of the literateur.

This book is based on recent medical literature, contains among other new features, the terms of the Basle Anatomical Nomenclature, the Standards of Pharmaceutic preparations as authorized by the Eighth Decennial Revision of the United States Pharmacopeia, and has been made up in a form most suitable for ready reference, and especially well bound in flexible leather. G.

### **Diseases of the Nose and Throat.**

By D. BRADEN KYLE, M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fourth Edition, Thoroughly Revised and Enlarged. Octavo volume of 725 pages, with 215 illustrations, 28 in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$4.00 net; Half Morocco, \$5.50 net.

The appearance of the 4th edition of Dr. D. Braden Kyle's standard work on Diseases of the Nose and Throat is certainly indicative of the popularity and constant demand for this excellent volume.

The new edition has been thoroughly revised; many new articles and chapters have been added; rhinological literature, both American and foreign, have been brought up to date, and the number of illustrations has been increased.

In the opinion of the reviewer it is often more difficult to revise an old edition than to present a new book, and in this task Dr. Kyle has been exceptionally successful.

The author maintains the position which he has outlined in previous editions, in that he considers each subject from the general standpoint in its relation to the specialty which he represents so well. G.

### **The Principles and Practice of Modern Otology.**

By JOHN F. BARNHILL, M. D., Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine; and ERNEST DE W. WALES, B. S., M. D., Associate Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine. Octavo of 575 pages.



with 305 original illustrations, many in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.50 net; Half Morocco, \$7.00 net.

In this age of multiplicity of text books, it is well to single out the objects and purposes for which each volume is produced. The authors of this volume have very honestly expressed their objects as follows:

1. To modernize the subject of Otology; 2. To correct certain traditional beliefs that have done much to hamper the progress of otologists in the past; 3. To advocate the fullest possible prophylaxis, or treatment, which has often been lost sight of because of the unusual activity of the surgical aspects of otology; 4. To emphasize the importance of a thorough examination and a definite diagnosis as a basis for rational treatment, since much of the success of otological practice depends largely on these issues; 5. To thoroughly illustrate the texts. Here the authors have succeeded exceptionally well, and we note many original illustrations, and the absence of the usual stereotyped cuts which have been reproduced from volume to volume.

We would frankly compliment both the authors and the publisher on the admirable way in which the objects for the preparation and production of this volume have been carried out, and the objects above referred to have been maintained.

G.

#### **Text-Book of Otology.**

By FR. BEZOLD, M. D., Professor of Otology at the University of Munich and FR. SIEBENMANN, M. D., Professor of Otology at the University of Basle. Translated by J. Holinger, M. D., Chicago. Cloth. Pp. 315. Price, \$3.50. Chicago: E. H. Colegrove Co., 1908.

Dr. J. Holinger has conferred an especial opportunity on American and English otologists by translating the work of the two great German masters in otology, Prof. Bezold, of Munich, and Prof. Siebenmann, of Basle.

It is a fact much to be deplored that many of our readers are unfortunate in not being thoroughly familiar with the modern languages other than their own, and because of this lack of accomplishment they are frequently unable to keep in touch with the literature and the original work which is so thoroughly produced on the other side of the Atlantic.

It is always an indication of literary and scientific value, and of original work, when the recorded results of active workers in science are translated into another tongue.

The many years of diligent research which Prof. Siebenmann has made in developing the pathology of oto-sclerosis and rarefaction of the labyrinth, and the extensive experiments and tests which have been made by Prof. Bezold with his carefully constructed series of tuning-forks, and the differential diagnoses which have been made possible as the result of these deductions, are of inestimable value to every worker in otology. When we add to this the immense clinical resources and experiences of these veteran teachers, and find much of this subject matter contained in a little more than 300 pages of text, we have a rich store-house of information and much food for thought. The laborious work of the translator should carry with it the gratification that he has placed additional resources at close hand to his English reading confreres.

G.

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ERRATUM: The foot-note to Dr. W. Sohler Bryant's article, "The Management of Suppuration of the Middle Ear, Etc.," on page 193 of the March number should be: Read before the Thirteenth Annual Meeting of the American Laryngological, Rhinological and Otological Society, May 30-June 1, 1907.

